The Dravidian Problem in the South Indian Culture Complex

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Pondicherry,
January 1970

P. JOSEPH

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AUTHOR'S PREFACE

This brochure has grown out of a short paper—carrying the title "Archaeology and the South Indian Dravidian Problem",——submitted to the Second International Conference-Seminar of Tamil Studies, held at Madras between the 3rd and the 10th of January 1968.

Problem and Evidence

The main problem posed here is: From where and when did the Dravidians come to South India? An ancillary problem too arises: What were the other linguistic elements that coalesced with the Dravidian and when did they do so to bring about the complex cultural set-up that is found in south India today? The evidence used in tackling the problems is mainly archaeological. To invoke archaeology to settle problems largely linguistic should seem strange. But prehistoric cultures were built by people who spoke languages and hence to investigate the possibility of a link-up between cultures and languages is quite legitimate. Archaeology, however, may not provide the entire answer, especially when there are no contemporary written records or these records have remained unread or again the reading has not been generally accepted. In such situations aid from other disciplines has to be sought.

In the past archaeologists used to be chary of going beyond their field of predilection. But now a more liberal attitude has emerged because of the realisation that archaeology alone does not provide the 'open sesame' to every question. Hence, today an archaeologist, dealing with testimony going beyond his special sphere and even indulging in weird speculation is not an uncommon sight. In the present study corroborative evidence from linguistic prehistory and ancient Indian oral tradition—no doubt, subsequently written down,—has been pressed into service.

Anthropological Evidence not used—Out-moded and insufficient

It is customary, while dealing with prehistoric cultures, to take notice of the available anthropological data. In this study, however, this evidence has, for reasons explained below, been eschewed, though others' opinions have been recorded mainly

with a view to underlining their untenability. Recently anthropological notions have undergone a thorough change. The old ideas of racial types and the methods of fixing them are now completely outmoded. Racial types like Mediterranean, proto-Australoid, etc., do not exist in reality but only in the mind of the anthropologist. What one can study is the homogeneity or heterogeneity of given populations with the aid of approved measurements that provide indices. Such study is easy with living populations, where a large sample can be placed at one's disposal and accurate measurements can be ensured. But with regard to prehistoric cultures the available samples are hardly sufficient. Sen's requirement is at least 200,—a pretty tall order, rarely realisable. Moreover, the material is found so badly smashed up or mutilated,—after all the superimposition of many centuries of debris must tell,—that the measurements made from them can be quite misleading. The old notions and methods are dead and the new ones cannot, due to the essential limitations of the material, be applied to achieve accurate results.

And yet most Indian anthropologists still seem to swear by the old theories and methods. Sarkar, who analysed the Lothal material, has even come out with such an anthropological oddity as would raise the eye-brow of many an even orthodox anthropologist. He has discovered an ' Aryan racial type ', as if the word ' Aryan ' has given up its linguistic connotation to take on a so-called racial one! This is quite in line with Allchin's recommendation to reuse the term ' Dravidoid ' in both an anthropological and linguistic sense.

Dangers of Interpreting Inadequate Anthropological Data

Speculation on insufficient and hardly intact samples seems an exercise in futility. It can be dangerous too. The danger has recently been illustrated. Sen, after warning against the danger, analysed the material from Harappa (48 skulls belonging to two different cultures, Harappan and Cemetery H), Mohenjodaro (12 skulls, four of which were so badly broken up that they should have been set aside) and Lothal (8 skulls each with a question mark) to demonstrate the working of the statistical method. The results showed a homogeneous long-headed strain at both Harappa and Mohenjodaro and a short-headed stock at Lothal. Then Sen drew certain conclusions that were definitely unwarranted.

As the present populations of the north-western sub-continent and Gujarat are dolichocephalic and meso-brachycephalic respectively, he said—and others have repeated him,—this state of affairs must have obtained even before Harappan times. He also went on to suggest that the respective populations and even the cultures were indigenous and did not come from outside the sub-continent.

These far-reaching conclusions have been particularly unfortunate in the case of Lothal, where so small a sample has given so wide a range of measurements, starting from extreme dolichocephaly and ending with extreme brachycephaly ! The mean of the measurements, namely, meso-brachycephaly is most misleading.

The results have revealed some peculiar situations, *e.g.*, two physically different populations like those of Gujarat and the Indus valley having the same culture (Harappan) and two physically alike populations, namely the Harappa and Cemetery H folk, having two distinct cultures. While there is nothing impossible in these situations they do show that inadequate data can lead to fantastic conclusions.

The truth is that such data can give no worthwhile clue to the nature of population of the concerned site at a particular period. And even if the samples were entirely satisfactory, the conclusions arrived at for individual sites cannot be extended to whole regions over a considerable time-span. This apart, the samples, however perfect, can say nothing whatsoever regarding the origin and diffusion of cultures.

Prehistoric anthropological data, hence, are best left alone until the essential conditions regarding quality and quantity or samples are fulfilled; otherwise the results would reveal a definitely distorted picture of prehistoric populations.

Method

The method employed in this study is regressive. Starting from the earliest historical times when incontrovertible evidence is available, the search is pushed back into prehistory by examining the various cultures thrown up by the archaeologist's spade until a stage is reached when the answer to the problem posed seems patent.

Scope

The scope, therefore, of the study is quite extensive. Beginning from the Asokan times it passes through the megalithic, neolithic, chalcolithic and post-Harappan cultures and reaches the end of Harappan civilisation. The scope-in-time of the study extends, therefore, from the 3rd. Cen. B.C. to the start of the 2nd. millennium B.C.,—a span of nearly 2000 years. Its scope-in-space covers the sub-continent from the end of the peninsula through the Deccan, central India, south-east Rajasthan, the western Gangetic basin and Kathiawar-Gujarat to the Indus valley and even beyond, namely, the Indo-Iranian border-land, central Asia and west Asia.

Aim

This effort has the least pretence to being anything but the barest outline. It is meant merely to indicate a possible line of study with a view to fuller utilisation of the already available material as well as further addition of evidence from the new data constantly cropping up. Most scholars insist there was no connection, except for far contacts, between the post-Harappan or late Harappan culture of Kathiawar-Gujarat and the chalcolithic culture of south-east Rajasthan, central India and the Deccan. A few talk of the post-Harappan sites sometimes as late Harappan and at others as chalcolithic and without going deep into the implications of this confused appellation, they merely say that the late Harappans went from Kathiawar to the mainland and there lost their identity. And yet this confusion seems to provide a pointer to a sphere of fruitful research.

Use of Terms

Well-known terms like ' megalithic ', ' neolithic ', ' chalcolithic ' and ' neolithic-chalcolithic ' have been retained, since their usage, has almost been sanctified by time. However, the controversies raging around them have been discussed in the appropriate context. A couple, *e.g.*, ' megalithic ' and ' neolithic-chalcolithic ' may not be technically correct, but they are well understood. Terminological exactitude has never been the particular hall-mark of the Indian scene. Several standards have influenced the naming of cultures. Harappa culture, for instance, has been called after type-site, chalcolithic culture (of south-east Rajasthan, central India and the Deccan) after industry painted grey ware culture

after pottery and megalithic culture after sepulchral practice. We have no particular body like an academy that can take care of the task of fixing terms. Nothing much came of the debate on terminology at the conference held at Delhi in 1961 during the centenary celebrations of the Archaeological Survey of India. The terms under reference came into vogue largely through individual initiative, copying usage developed in another milieu—west Asian or European,—but they are very popular in this country. To let now fastidious fancy alter them would lead to otherwise easily avoidable confusion. Pedantry in nomenclature,—it seems advisable at present,—has to be eschewed even at the cost of quite commendable correctness.

CHAPTER

DRAVIDIAN DREAMLAND

For nearly a century the quest for the original home of the Dravidians has been on. Until recently it was largely anybody's guess,—it is still so to some extent. The reason is not far to seek—there was hardly any reliable evidence to go by. There is now an apparent profusion of material; certain essential links, however, seem to be lacking and hence the sifting of data is none too easy.

Some, taking the line of least resistance, have said the Dravidians were autochthones. Others, using largely linguistics and particularly etymology, brought the Dravidians from outside —Africa, West-Asia and Europe—in fact anywhere along the Mediterranean seaboard.

Yet others, basing their view on ancient tradition, have plumped squarely for 'Lost Lemuria' as the original Dravidian homeland.

Lost Lemuria—Evidence from the Distribution Pattern of Ancient Peoples

Geologists, palaeontologists, oceanographers, etc., had all along felt their researches lead to the formulation of a hypothesis: the subsidence of a land-mass south of India. Confirmatory evidence too seems available from a consideration of prehistoric human migrations. Most scholars think that the so-called aborigines in the bushes of Australia as well as the pigmies and their taller kinsmen—anthropologists, who still talk in terms of old racial notions, call the last two groups Negritoes and Negroes respectively—had not always stayed in the areas where they are now, namely, in the area skirting the Indian ocean, *i.e.*, in Australia, Melanesia, the Philippines, Indonesia, India, the southern shores of Arabia and Africa. They are on differing cultural levels; the bushmen are an inferior type of hunters, the pigmies high-grade hunters and their kinsmen are neolithic gardeners. In the backwoods of Australia the bushmen live in a pure state, so do the pigmies in the Philippines, Andamans and Congo basin and their taller relations in the Congo forests. Elsewhere they have mixed with other peoples. A special feature of their distribution is that a

population with a higher culture surrounds one with a lower. For example, the pigmies have been pushed right into the depths of the Congo basin by the other Africans, who on their part are surrounded by a mixed population composed of themselves and late-comers like the Cro-Magnon and Combe-Capelle folk of the European upper palaeolithic.

From this distribution it is obvious that the pigmies and their African neighbours should have reached the Congo ahead of the upper palaeolithic people. Otherwise the distribution pattern would have been the other way round. So the pigmies and the others must have arrived in Africa in the lower palaeolithic age itself. In the same way must have spread the bushmen too,—in fact, ahead of the pigmies and others in view of their lowest cultural level,—to wherever they are now. As all these peoples live along the periphery of the Indian ocean and as they had known no boat-travel—that knowledge man acquired only during mesolithic times—they must have gone to their destinations only over a land-bridge. Hence the need to postulate a continent in place of the Indian ocean, which subsequently came into being. The migrations seem to have been caused by sinking land from which the inhabitants fled and this explains the segregation of the Andaman pigmies islanded right in the midst of the sea. Here was a group that was caught napping by the swirling waters.

Proof from the Indian Ocean Expedition

What had long been a working hypothesis has now been established on a firm footing by the Indian ocean expedition,—a remarkable example of the 20-nation co-operative effort during the international geophysical years, 1961–65. The expedition has made innumerable soundings and mapped out a land-mass with marvellous features like huge mountain barriers and deep rift valleys. The large number of samples, geological, palaeontological, etc., are still being studied and the vast amount of data is being processed at various centres. Meanwhile, the fact of the submersion of land;—surmised as having been one of the oldest portions of the planet,—has been proved.

When was Lemuria Lost

When did the event take place? According to geologists this incident might have occurred as a possible concomitant of

a mighty upheaval that shot up the Himalayas to an awe-inspiring height of 26,000-odd feet and ushered in the climatic variations, *i.e.*, glacials and inter-glacials (cold and warm spells) of the Pleistocene in the northern regions of our globe. In the southern parts, *i.e.*, the tropics, probably as a kind of nature's balance, a substantial subsidence of land took place aided by the heavy inundations of the pluvials (wet spells), that mercifully alternated with inter-pluvials (dry spells). The sinking of land must have been aided by the melting of ice-sheets during the inter-glacials. If the snows now locked up in the glaciers were to melt, it has been surmised, the sea-level would rise by about 200 ft. A further estimate is that at the height of the last glaciation the sea-level was almost 300 ft. lower than at present. Since glaciation was severer towards the start of the Pleistocene, larger masses of water would have been released during the early warm spells. In the tropics there was apparently a continuous process of alternating inundations (during the pluvials) caused by heavy rains and floods (during the inter-pluvials) due to the melting of snows. The sinking of land, however, might not have been one long affair but an intermittent process because of the difference in the severity of rain-induced inundations and thaw—caused floods as the Pleistocene progressed.

The loss of Lemuria, therefore, must be placed in that part of the Pleistocene which corresponds to the archaeological lower palaeolithic. The Indian ocean expedition has tried to fix an approximate date of 200 million years.

Tamil Tradition regarding Lost Lemuria

Now to deal with the Tamil tradition about lost Lemuria, which though long persisting was, committed to writing only after the 11th cen. A.D. The first to do so was Nakkirar who included the tradition in his commentary on Iraiyanar's *Ahapporul*. Subsequently Nachchinarkkiniyar and Adiyarkkunallar, also commentators on the Tamil classics, merely followed suit. According to the tradition, the ancestors of the Tamils once lived in a continent south of Kanyakumari which was devoured by the sea. Many details of the countries, mountains and rivers, with their names, have been given. The land-mass sank in three stages and particulars of features that disappeared at each stage have been enumerated. The high degree of civilisation the inhabitants had attained has been referred to, specially the fact that at different periods,

they had three literary academies, the output of the first two of which was irretrievably lost in the sinking of the land.

The tradition had long lain somewhat dormant until a few Tamil scholars in the early years of this century resuscitated it. In recent years there has been a sudden spurt of popular enthusiasm for it and this popularity has affected even a section of the scholarly world. The reason for the increase of interest is the finding of the Indian ocean expedition regarding the sunken land.

The commentators, it is obvious, did not examine the tradition critically but merely recorded it. So did many after them. Some, however, have added their little bit, namely that Tamil was the first-ever language spoken by the first-ever community. Yet others have extended the community to cover all Dravidians.

Apparently two separate traditions have got mixed up here, one regarding a cataclysmic upheaval in geological time and the other concerning literary academies. Both have been somehow pieced together, may be because of the part played by the sea in each case. What the Indian ocean expedition has confirmed is only the tradition regarding the submerged continent and has nothing to say concerning the Dravidian dreamland! Old stone age man had a simple rudimentary culture. He was a mere hunter. He no doubt had language but certainly no writing and positively no literature of such high standard as would pass the scrutiny of a board of censors. Writing appeared in the cultural sequence only when man had reached a stage when certain leisured classes like scribes, traders, artisans, etc., who were not primary producers, could be sustained by the economy. Such a stage was reached only when men began to live in cities during the bronze age and after. Literature could have been cultivated only then and hence the Tamil tradition regarding academies must have been a recent one.

Lack of critical appreciation has been the bane of most of what has so far passed for Dravidian scholarship. Surely the quite respectable antiquity of Tamil literature,—the oldest in any living language of the modern world,—can be adequately assured otherwise than by pushing it down the dizzy depths of the prehistoric pluvials to almost the date of man's debut on the sub-continent, if not the planet.

And so, in recent years, particularly since independence, responsible scholars began looking to *terra firma* rather than

terra submersa for the Dravidian homeland. They turned to more tangible testimony, namely, that provided by archaeology. In this quest they were lucky, since a considerable amount of material has been laid bare by the combined efforts of the Archaeological Survey of India as well as universities and institutions of which the Deccan College, Poona, under the able leadership of Dr. Sankalia, has played a remarkable role.

Scholars have tried to identify one or the other of the prehistoric cultures of the peninsula as Dravidian. Some have put forward the claims of the megalithic culture. Others have argued the case of the neolithic culture. In this brochure the view advocated . . . well, it is for the persevering reader to browse over the rest of the pages and find out for himself.

CHAPTER 2

MEGALITHIC MYSTERY

The Asokan edicts, which carried the earliest historical reference to Dravidian presence in south India, spoke of the Tamil kingdoms of Chera, Chola and Pandya. This notice was corroborated by the Tamil-Brahmi inscriptions of which the oldest,—so far discovered,—have been placed in Asokan times, *i.e.*, 3rd. cen. B.C. These inscriptions were scattered over Tamilnadu. To the north dwelt the speakers of other Dravidian tongues, specially Kannada and Telugu. In their territories, which formed part of the Asokan empire, stood the relevant Asokan edicts at Maski, Brahmagiri and Kopbal.

Terminological Objection

Archaeologically the Asokan age marked almost the fag-end of the megalithic period. Some scholars have not taken kindly to the use of the word 'megalithic' in the Indian context because of its overtones of diffusion from Europe or of contemporaneity with European dolmens. They have instead suggested the phrase, 'iron age'. While technically theirs is a better choice, yet the word 'megalithic' has the merit of long usage. Moreover, in using the word one does not rush to conclusions of diffusion or chronological equation,—which have to be decided in the light of the available evidence.

Many Megaliths: Few Habitation Sites

The megaliths were, perhaps, some of the earliest-known archaeological monuments from south India. They were brought to light by the indefatigable labours of the officers of the Archaeological Survey and amateur archaeologists, like British civil servants and missionaries, who were so keenly enthusiastic about the monuments that they took time off their schedule of normal duty to investigate them. Much of this work at the start consisted of the collection of grave-goods which adorn museums, both public and private. Work was hardly scientific until the forties, when Wheeler blazed the trail at Brahmagiri. Since then many monuments have been excavated. Habitation sites, however, have

been hard to come by. Some have been investigated; a few more have been explored. But they are nowhere in proportion to the large number of known megaliths. Though we have now some idea of the way of life of the megalith-builders, yet there is a great deal more to be still brought to light. There is great need to concentrate on the discovery and excavation of many more habitation sites. Only then will the aura of mystery that still shrouds the megalithic people be dispelled and the huge tombs made to shed the secrets they have sedulously guarded so long.

No Megalithic Complex

In India we have jumbled up cists, cairns, alignments, menhirs, umbrella-stones, etc., in a huge megalithic complex. So was the practice in Europe. Recent research in Denmark has shown, however, that the various types had independent origins. There is, therefore, no more talk of a European megalithic complex. Similar work is the need of the hour in India.

Construction of Megaliths

The enormous stone sepulchres, which have given the name to the period, have been described by many a worker during many a decade. Distributed throughout the Deccan plateau, where the profusion of granite and laterite has come in handy for their construction, these gigantic stone chambers were built on the pattern of a house of cards. Made mostly of six stone slabs, sometimes smoothly and at others roughly dressed, the tombs, were either sunk into the ground or raised over it, with well defined passages leading to them. They were covered by stone circles and cairns or tumuli. Though there were quite a few combinations and permutations of these details in their construction, the tombs shared certain essential characteristics. They all had a port-hole in a side-slab.

Contents of Megaliths

Their contents too were invariably the same, namely, beads of precious stones and metals, black-and-red, plain black and plain red pottery, hand iron tools and weapons. These tombs, in fact, ushered the iron age into south India. Bead-making, the technique of manufacture of the black-top and red-bottom ware through differential firing, and the plain black and plain

red pots apparently came down from the previous period,—of this more later. The iron implements, however, were unknown earlier. This useful metal was employed widely. This can be verified from the variety of tools that had been turned out, namely, arrow-heads, mid-ribbed swords, daggers, chisels, axes, adzes, knives, horse-bits, wedge-like blades, spears or lances with flat long blades and round shafts ending in a knob, leaf-shaped spears with socket base, javelins, crow-bars, sickles, hooks, ferrules, hatchets, nails, frying pans, ladles and tripod stands.

Date of the Megaliths

Dating the megalithic tombs and, hence, the iron age in south India had been anybody's guess until Wheeler, on evidence of external contact, placed them at the earliest in the 3rd. cen. B.C. Wheeler's conclusion, however, it was realised all along, went a little beyond the premises. The only safe deduction was that the megaliths flourished in the 3rd. cen. B.C. and not that the *terminus a quo* was around that date. Subsequently evidence was accumulating, that pointed to an earlier date for megalithism in south India. Quite recently data have been unearthed that would help fix the start of the megalithic culture at the beginning of the 1st. millennium B.C., in fact, at the end of the previous neolithic-chalcolithic period. At Terdal (Bijapur Dt.) Tekkalakota (Bellary Dt.), Piklihal (Raichur Dt.), Brahmagiri (Chitaldrug Dt.) and Hallur (Dharwar Dt.) there was an overlap between the megalithic and the earlier neolithic-chalcolithic cultures. A c.14 date of 1105–955 B.C. is available for the overlap at Hallur. The megalithic period extended, therefore, almost throughout the 1st millennium B.C.

Anthropological Evidence Misleading

Who were the people that built the megalithic tombs and used iron and where did they come from? The anthropological material came from Yelleswaram (Andhra Pradesh) and Adichanallur (Tamilnadu). Of the six skulls from the megaliths of Yelleswaram three belonging to males were identified as Scytho-Iranian. The urn-fields of Adichanallur, though not found associated with megaliths, are ascribed, because of similarity of contents, to the megalithic period. Thirteen skulls, so badly battered that measurements had to be taken from reconstructed specimens,

have been deemed to resemble two types, the Mediterranean and proto-Australoid. Apart from the fact that the conclusions reveal adherence to old anthropological notions, no more relevant, they have been based on very limited and unsatisfactory material.

Megalithic Folk Immigrants by Sea ?

Some scholars think that the megalithic people came to the Deccan from outside the country. Furer-Haimendorf suggested that the dolmen builders of Europe migrated by sea to peninsular India about the middle of the 1st. millennium B.C. and they started megalithism in south India. He laid special stress on the port-hole common to both European and south Indian dolmens. The European emigrants, he asserted, were the Dravidians and in this regard he pointed to the similarities between Finno-Ugrian and Dravidian languages.

This theory is beset with diverse difficulties. Haimendorf's date for the arrival of immigrants could be adjusted to make it agree with the new date of c. 14. 1000 B.C. for the start of Indian megalithism; yet there is no evidence of mass maritime emigration of men, much less of Dravidians, into India around that date though a few contacts of the west with India by sea could be surmised. Moreover, the time-lag is considerable, as the European megaliths were at least a thousand years older than the Indian. Then again, these structures in Europe were neolithic, whereas the Indian ones belonged to the iron age. Finally, the affinities between Finno-Ugrian and Dravidian could be explained otherwise than has been suggested. In prehistoric times, before the Aryans pushed into west Asia and beyond there was a polysynthetic linguistic stratum extending from India to western Europe all along the Mediterranean coast; and the Finno-Ugrians could have borrowed polysynthetic elements from their European neighbours before Aryan languages were imposed on them.

Megalithic Folk Immigrants by Land ?

Recently the case of an immigration by land has been advanced. Owing to chronological and cultural complications emigration from Europe is not pressed. But that from nearer home, say, Iran, is advocated. In this connection attention has been drawn to huge stone monuments in the hills near Karachi and in the Las Bela district of south Baluchistan, where one of the megaliths

had a port-hole. Fairservis thinks there was a widespread megalithic complex in the Indo-Iranian borderland. Unfortunately none of these structures has been properly excavated and even surveys have been scrappy. Stein, that veritable glutton for work, undertook most of these surveys and his work was of a summary nature with an occasional trial excavation thrown in, and in 4 days he had recorded as many as 178 monuments! Most of them were burial cairns. They contained grey pottery with tools of either copper or iron or both. Their date has been fixed about 1200 B.C. due to ceramic similarities with Sialk VI B. But those with copper tools ought to be dated earlier. There is a further complication in dating them, because cairn-burials are a living tradition in the area. These monuments were noticed in the west all along the south Iranian coast and southern Arabia. But no megaliths were found there.

In south India cairn burials were quite few and it is only by implication that they are included among megaliths. Recent work in Denmark—as already stated—showed that dolmens, cairns, etc., had independent origins. Perhaps, the case was similar in Baluchistan and south India. Anyway, the tool-types in the north-western cairns and the peninsular megaliths are different. Furthermore, between Baluchistan and the Deccan no megaliths have turned up. Finally, the typically south Indian megalithic black-and-red ware was not met with anywhere in the borderland or beyond. And so, an immigration of megalithic people by land is as difficult to prove as one by sea.

Megalithic Culture mainly Local

Meanwhile certain factors may be stressed that seem to preclude any large-scale immigration into the Deccan from outside. If one compares the elements of the megalithic culture with those of the earlier, one finds quite a few common items. As proved by the sites where overlap between the two cultures was noticed, the culture that preceded the megalithic was a mixed one, composed of neolithic and chalcolithic elements. This composite neolithic-chalcolithic culture gives a clue to the megalithic tradition. The neolithic complex can be isolated from the chalcolithic in almost every detail,—this is possible because the chalcolithic culture, which combined with the neolithic in the Deccan, specially southern, was almost pure in central India and south-east Rajasthan,—and

Kalibangan: A. Extended Burial in grave-pit.

B. Pot-burial, Harappan.

Copyright: Archaeological Survey of India.

how far the megalithic culture was indebted to the neolithic and chalcolithic elements of the previous culture can be determined.

Use of Huge Stones

Megalithism, in so far as it connoted acquaintance with huge stones, apparently evolved from the neolithic component of the earlier composite culture. Settlements were then built on castellated hill-tops besides foot-hills and river-banks. Where huge stone boulders did not provide a natural defensive periphery, they were levered up the hills and placed there. They still stand on their precarious perch in the wide area covered by the southern districts of Andhra and Mysore states and the northern districts of Tamilnadu, as mute mementoes of man's mighty endeavour. The transition from the use of huge stones for defensive purposes on hill-tops to that of burial tombs on hill-sides or on lower ground was a mere matter of development.

Urn-Burials and extended Burials

Urn burials in the typical black-and-red pots,—this ware was a chalcolithic survival,—of bones after excarnation through exposure were only a continuation of a previous neolithic practice, with the difference that the urns were placed in stone chambers instead of pits below house-floors. In megalithic times there were, in addition to urn-burials involving the bones of single individuals, collective urn-burials, characterised by the deposition of bones of more than one person in a single urn. This practice was known earlier, *e.g.*, at Nagarjunakonda and Nevasa. The megalithic extended burials too were in vogue earlier, *e.g.*, at Piklihal. This was perhaps a chalcolithic practice.

Funerary Goods

The practice of placing funerary goods too had come down from an earlier era, though now they were more lavish and even showy.

These included food-stuffs, pots, beads, tools, weapons and figurines. The custom of depositing funerary goods apparently reflected a belief in a life hereafter and the megalithic people owed the belief to the predecessors of the neolithic-chalcolithic age.

Stone Tools

Stone artifacts like microliths, querns and rubbers which were found in certain megaliths, were a legacy of the previous period. Microliths must have been in use at the beginning of the megalithic period until iron tools replaced them fully. Stone querns and rubbers have defied replacement and have lasted to this day.

Beads and Figurines

Bead manufacture was a chalcolithic tradition and was passed on to the neolithic people when their culture coalesced with the chalcolithic. So was the fashioning of figurines. These crafts were bequeathed to their megalithic successors by the neolithic-chalcolithic folk.

Pottery

The typical megalithic black-and-red ware too had come down from the earlier period, namely, the neolithic-chalcolithic. The differentiation in shade resulted from inverted firing; the top of the pot was fired under reducing and the bottom under oxidising conditions. But the results were not uniform as, *e.g.*, at Piklihal (Raichur Dist.) where black-and-gray, black-and-buff, etc., resulted. The technique was widespread. It was known at Tekkalakota (Bellary District), Kesarapalli (Krishna District), Bahal, Prakash and Chandoli in the Deccan, Navdatoli in central India, Ahar and several other sites in Rajasthan. The chalcolithic people apparently carried it to the Deccan and gave it to the megalithic folk. The technique in question was used in the neolithic-chalcolithic period to produce not only the black-top red-bottom ware but also that with black interior and red exterior.

Though this technique was used by the megalithic people to produce commonly the black-top red-bottom ware, yet occasionally they seem to have made the black-interior and red-exterior variety too. The published reports are not very clear on this point. It definitely needs further investigation since an occasional black-interior and red-exterior pot has turned up in the megaliths of Coimbatore District.

Even the ordinary black and the ordinary red varieties of pottery found in megalithic tombs and habitation sites could have descended from the neolithic-chalcolithic age, though there was

nothing very special about these pots that tied them to any particular period. They could be produced independently in several periods.

Port-hole

In this connection the existence of port-holes in the tombs is easily explained. Once the people decided to keep on introducing fresh funerary goods from time to time and to effect subsequent burials in the same tomb, the conception of a port-hole was obvious. Quite a few of the stone chambers were apparently family vaults. Megaliths are a living tradition among the neolithic aborigines of central India, but the port-hole is not seen in the tombs. The port-hole was apparently a local development in the Deccan. Modern megalithism, it is significant to note in this regard, thrives in an area outside the pale of the old neolithic-chalcolithic culture whereas the territory of the old megalithic culture was almost exactly co-extensive with that of the neolithic-chalcolithic predecessor.

Food Products

The chief food products that were grown in the megalithic period were finger-millet (*Ragi* in Dravidian) and horse-gram (*Hurali* in Kannada, *Ulavalu* in Telugu and *Kollu* in Tamil). The same items of food were cultivated in the earlier period. The area of cultivation of finger-millet and horse-gram, it is highly instructive, coincided almost exactly with the duration of the megalithic and the neolithic-chalcolithic periods. In fact, the area is still the same today. The entry of *Ragi* and *Kollu* as chief items into the modern dietary of the majority of south Indians has to be traced back to the neolithic-chalcolithic age.

Irrigation

Cultivation during the megalithic period was with the aid of artificial irrigation tanks, many of which, incidentally, stand to this day. In the earlier period cultivation was carried on also through irrigation with the help of stone avenues that led rain water from terrace to terrace on hill-tops. There was also cultivation on level ground. The neolithic-chalcolithic terrace cultivation through irrigation finally descended to the ground-level in the following period.

Graffiti

Graffiti on pottery was known in megalithic times. These graffiti had obviously come down from the neolithic-chalcolithic age. It has been suggested that writing was unknown to the neolithic-chalcolithic man and even to his megalithic successor. As far as the latter is concerned, the contention can hardly be maintained, since the sudden knowledge of writing in the historical period, starting with Asokan times, cannot be explained without a preparatory stage in the earlier megalithic period. In fact the preparatory stage went much earlier into the neolithic-chalcolithic age. The graffiti are definite evidence of writing, as these signs can be shown to be connected with the Harappa script symbols. The fact that we do not know the phonetic values of the graffiti is a measure of our ignorance and not evidence of the non-existence of those values. To judge by the quantity of extant graffiti, knowledge of writing was apparently confined to a select section of the community. May be writing also existed on the traditional palm-leaf,—as seemingly was the practice in the historical period,—which failed to survive the ravages of time. If so, literacy would have been more widespread in the megalithic than in the earlier age. Whatever the speculation regarding the extent of the knowledge of writing, it may be observed that graffiti were a chalcolithic contribution to the composite culture that passed them on to its megalithic successor.

Neolithic and Chalcolithic Elements in the Megalithic Culture

To summarise, the features the megalithic period borrowed from the neolithic were a familiarity with the use of huge stones, urn-burial of bones after excarnation by exposure, the placing of funerary goods like food-stuff, etc., and, hence, belief in a future life, terrace-cultivation of food products, chiefly finger-millet and horse-gram. The traits that the megalithic owed to the chalcolithic were black-and-red ware beads of terracotta, precious stones and metals, terracotta figurines, knowledge of writing, probably extended to burial and also food-products like bajra, jowar and rice. Since some traits were common to both the neolithic and the chalcolithic, the megalithic age could have got them from both. They were cultivation on the ground as opposed to terraces, artificial irrigation and stone artifacts like microliths, querns and rubbers as well as plain black and plain red wares.

In the neolithic-chalcolithic period man lived in small village settlements on hill-terraces. He buried his dead there with simple ritual. He grew his food there. He gathered the irrigation water there. He descended to the ground mainly to supplement his larder with wild game and fruit from the forest. In megalithic times man descended to the ground permanently. He lived still in village settlements at least at the start. He, however, buried his dead more ostentatiously. He grew the same food as before but on the ground. He collected his irrigation water there. He still supplemented his food supply with wild game and forest-fruit. But the mere transference of locale from hill-top to the ground gave him more elbow-room; he began to reclaim more land and expand his activities. Thus grew his settlements into towns towards the close of the megalithic era. A self-sufficient village economy grew into a surplus one that could support new social classes, like artisans, craftsmen and traders.

Foreign Elements in the Megalithic Culture

Several ideas germinated and fructified in the neolithic-chalcolithic period. Some of them merely entered the megalithic age as they were; others did so evolve. In this process of evolution three items played a prominent role. They were new. The most important of them was iron. Where did it come from? The earliest so far known occurrence of the metal was at Eran (central India) in period II A (c. 14 date 1270–1040 B.C.). Other early finds of the metal were at Nagda II (central India) Prakash II and Bahal II B (both in northern Deccan) and Atranjikhera in the Gangetic valley. The last find has been dated about 1025 B.C. (c. 14) and the others later because of a definite break between the chalcolithic and iron age horizons.

Northern Origin of Iron

Perhaps in view of a possibly later date for the appearance of iron at Nagda, Prakash and Bahal than 1105 B.C., which is the date of its earliest occurrence at Hallur farther south in the Deccan, one hesitates to derive megalithic iron from the north. And yet such derivation seems reasonable. May be c. 14 determinations, whenever they will be available, will not post-date Nagda, Prakash and Bahal iron in relation to that of southern Deccan. Or iron might have gone to the Krishna-Tungabhadra

valley from Eran through some stages of which we have yet no knowledge. In any case a span of 200-odd years between the appearance of the metal first at Eran and later at Hallur seems sufficient, since its arrival in the south was apparently associated with a fresh and fast means of transport, the horse, which was the second new item in the megalithic culture.

No Northern Origin of Megalithic Culture

Iron implements, specially socketed spears and mid-ribbed swords and also horse-bits, eloquently proclaim their foreign origin. Socket for hafting, mid-rib for strengthening and horse for quick transport were unknown in the land until foreigners brought them in. Do they, however, signify a foreign invasion and a foreign origin for megalithic culture? Hardly ever. There was no sign of struggle or conquest in the overlap period of a century, at Hallur and other sites, between the neolithic-chalcolithic and megalithic cultures. There was apparently peaceful penetration by a foreign element. But this element was not responsible for the entire megalithic culture. If it were, megaliths of the Deccan type must be found in central India and the northern fringe of the Deccan. They have, however, not been. Hence some have suggested that the Deccan iron and so the megalithic culture must have had a foreign source different from a north Indian. This appears a gratuitous suggestion, since the route by which the Deccan iron and the megalithic culture could have come has not been chalked out. As a matter of fact nowhere in the world outside the Deccan have megalithic monuments, associated with iron and other typical cultural items, turned up.

Cultural Development due to Foreign Element

The foreign elements,—iron, horse and cremation (*vide* post-cremation urn-burials in the megaliths),—came in contact with the neolithic-chalcolithic culture and triggered off a quickening of cultural progress in a society that was already in the throes of change. That change occurred in items that were already there and that were far more numerous than the new ones, which, however, played the important role of more than a catalyst. They brought about a new advanced cultural set-up of which they formed an integral part.

Megalithic Metallurgy Local

While, no doubt, the knowledge of iron came to the Deccan from the north, yet the exploitation of the metal was apparently indigenous. After all iron ore has always been plentiful in the Deccan and the ancestors of the megalithic folk, *i.e.*, the neolithic-chalcolithic people had already known the smelting of copper. It would not have been too difficult for them to apply that knowledge, *mutatis mutandis*, to the working of the new, extremely useful metal.

The megalithic culture, it would seem, was mostly indigenous. It grew largely out of the neolithic and chalcolithic elements of the earlier composite culture that was activated by foreigners, who contributed a few important items. But these foreigners who came *via* the Indus valley,—as will be shown later—were not Dravidian. The Dravidians were already in the Deccan, it is obvious, at the start of the megalithic period. Hence the quest for their origin must now begin in the neolithic-chalcolithic period.

CHAPTER 3

NEOLITHIC NOVELTY

It is a little over a century since Bruce Foote, that intrepid worker of the Geological Survey of India, who has many ' firsts ' to his credit, blazed a veritably stony trail when he picked up the first neolith, a polished stone axe. It is, however, only a couple of decades since another enthusiast, who followed the trail, isolated the neolithic or polished stone axe culture in a stratigraphical setting at Brahmagiri. From that time several sites with a neolithic culture have been excavated. Compared to our knowledge of the megalithic way of life, that of the life of the neolithic folk is quite considerable, because the excavated sites were habitation ones and not mainly burial tombs.

Terminological Controversy

Recently there has been a controversy regarding nomenclature. It was said that the term ' neolithic ' in an Indian context was confusing since it might chronologically equate Indian neolithism with, say, the west-Asian, which was very much older. Hence such picturesque names as ' polished stone axe culture ' and ' food-producing culture ' were suggested for the neolithic culture of south India. The word ' neolithic ' carries no chronological overtones; it only signifies a stage in stone industry and need lead to no confusion with dates. What is desired is precision, not pedantry, and the word neolithic is quite precise. Moreover the phrase ' food-producing culture ' is applicable to any neolithic culture anywhere in the world, since food-production was an essential feature of neolithism. The phrase ' polished stone axe culture ' can refer only to neolithism in the south and not elsewhere in India. Such special names for neolithism in different areas can be quite confusing since they do not evoke the crossing of the hurdle between food-gathering and food-production which the word neolithic, though etymologically signifying only a stage in stone industry, easily recalls by long usage and association. So the term ' neolithic ' appears the most satisfactory.

Ultimate Origin in West Asia ?

There has been a lively argument regarding the origin of the south Indian neolithic culture. Those who derive it from outside, chiefly the diffusionists, consider that the neolithic revolution initially began in west Asia at Jericho in the 7th millennium B.C. and spread all over west Asia and then went east to Kile Ghul Mohammed (c.14 dates of 3690 and 3510 B.C.) in the Quetta valley, from where it must have travelled to south India.

Diffusionism

Diffusionism is based on the 'nuclear area' theory. A nuclear area is one where culture begins and spreads all round. In the neolithic nuclear area not only archaeological data for a transition from hunting to farming must be found but also ecological evidence for wild animals and plants that could be domesticated. Such have been available in west Asia.

Drawbacks of Diffusionism

This theory held good as long as not many sites were known and those known were pretty close to one another. But with the discovery of a host of sites in west Asia itself and others outside—extending from Russia to Japan—doubts have been cast on the theory. The available c.14 dates do not point to a pleasing symmetry of succession of sites from the nuclear area to the periphery.

Moreover, development in all sites was not the same. In some there was no pottery but only agriculture. In others there was pottery but hardly any farming. Again at some sites pottery preceded agriculture, while in others it was the other way round.

Hence, even Braidwood, the author of the nuclear theory, has admitted the possibility of independent origin of neolithic cultures in many areas. After all, given the ecology, man was capable of crossing the nuclear hurdle anywhere in the world.

Central Asian Origin ?

Some scholars have tried to bring the south Indian neolithic from central Asia. Allchin, the chief advocate, has based his argument mainly on pottery resemblances. The south Indian neolithic has no known local origin. In none of the excavated sites, *i.e.*, in those that started with a purely neolithic stratum, has there been, so far, any evidence of a transition from hunting

to farming. Even at Utnur, where the earliest c. 14 date of 2160 B.C. is available and where the culture was seen possibly in its simplest form, such a transition was not observed.

Original Home of Grey Ware

The main constituent of the Deccan neolithic, namely, the grey ware has close parallels in shape, decoration and potting technique to the grey ware of west Asia, which apparently had its origin in the chalcolithic culture of Alishar in Anatolia in early 3rd. millennium B.C. Its spread towards the east was connected with the movement of peoples. By the middle of the millennium it had appeared at Hissar and later at Turang Tepe, Namazga Tepe, Shah Tepe, etc. Ground stone axes, though a dying tradition, were still known at Hissar III (2300–2100 B.C.). Microliths and copper were other cultural traits.

Route of Migration to Deccan

A group of pastoralists from the Caspian sea region—so the argument goes—who had been herding sheep and goats, came into contact with the eastward spread of the grey ware culture. The folk movements pushed them south. With a knowledge of ground stone axes, microliths and copper in addition to domesticated sheep and goats they passed through the Indo-Iranian borderland and Baluchistan, where they left traces of their passage, into Sind, where in their sojourn they picked up the knowledge of humped cattle. They finally reached the southern Deccan via Kathiawar, Prakash and Bahal (both in northern Deccan), where they left traces of their pottery.

Chronological Difficulty

This hypothesis has to overcome certain difficulties, the main one being chronological. In the Indo-Iranian borderland the date at which the grey ware appeared is unknown. In some places the ware was associated with iron, in others with copper and in yet others with both iron and copper. We may take into account only those sites with copper and date them around the close of the 3rd. millennium B.C. We may even similarly date the appearance of the ware at the Baluchistan sites of Nal, Kulli, etc. But once we enter Sind, we are stumped. Here the grey ware was known earliest in the Jhangar culture; which followed Jhukar,

that succeeded Harappa. Even the most generous estimate does not date Harappa's end in Sind prior to 2000 B.C. Allchin himself places it only around 1750 B.C. How could, then, the grey ware appear in the Deccan in 2160 B.C. at the latest?

When we come to Kathiawar, the chronological position of the grey ware *vis-a-vis* its counterpart in the southern Deccan is again disappointing. At both Lothal and Rangpur the ware seems to have had a pretty long life, covering Harappan and post-Harappan times. But its earliest appearance goes back to only 2080 B.C. (c.14)—the start of Harappan culture at Lothal. Though this date may be earlier than that of Jhangar, it is later than the c.14 date of Utnur. Then again it is anomalous that the grey ware which according to the hypothesis appeared in Sind earlier than in Kathiawar, should have been post-Harappan in the former and Harappan in the latter.

In northern Deccan the grey ware was found at Prakash and Bahal. The former site cannot enter the picture, since the ware turned up in a post-Harappan chalcolithic context. Bahal, however, is a different proposition. Here the earliest stratum IA, was pure neolithic,—with typical grey ware—followed by a break and then a chalcolithic phase, IB. Bahal IA has not been properly dated; no c.14 determinations have been made.

From the foregoing discussion it is clear that the topsy-turvy chronological position of the grey ware as between Sind and Kathiawar on the one hand and between them and southern Deccan on the other as well as the unknown date of the ware in the Indo-Iranian borderland, Baluchistan and northern Deccan militate against its central Asian origin.

Migrants' Knowledge of Copper

Then again, in the pure neolithic of the Deccan there was no copper. Copper appeared there only when the chalcolithic culture arrived. Much of the excellence of Allchin's work has been discounted by the lack of distinction between neolithic and chalcolithic. However, his upper neolithic can be equated with the chalcolithic or more descriptively neolithic-chalcolithic—a compound term to be explained later. If according to the hypothesis the immigrants had a knowledge of copper when they left their homes, they were a chalcolithic people already then. They could not have become neolithic in the Deccan.

Origin of Deccan Neolithic unknown

In view of the difficulties involved in deriving the Deccan neolithic from a foreign source, many have plumped for an indigenous origin but they are still unable to prove it. There is yet no complete agreement on the cultural elements of the basic neolithic. Even Utnur with its apparently simplest form may not give the answer, since as Allchin says, the people took there only such equipment as was most useful. After all Utnur was only a cattle pen, where herders migrated seasonally from some site of which we have no knowledge yet.

It is not impossible that the neolithic folk went to the southern Deccan from elsewhere with just one or two items, *e.g.*, grey ware and in their new home added other traits. If so, Kathiawar could provide a possible source. In Kathiawar the earliest occurrence of the grey ware was in the Harappan context. The origin of the ware however is unknown. Some have suggested that the Harappans picked it up on their way to Kathiawar but have not identified the site at which the Harappans did so. The other alternative is that the ware was indigenous in Kathiawar and that it was produced by a pre-Harappan population. It cannot be argued that this population took the ware to the Deccan on or before the arrival of the Harappans in Kathiawar, since, on the present evidence, the population was chalcolithic—apparently it was part of Harappan society,—and could not have suddenly become neolithic in the new home. And so, unless a pre-Harappan site or stratum with grey ware is isolated in Kathiawar one cannot connect its grey ware with that of the Deccan. Till then all this discussion is sheer speculation.

Meanwhile, there is talk of searching for areas with suitable ecology to prove the possibility of domestication of plants and animals. It is of course realised that within the relevant area archaeological data must be produced to prove the ecological finding. And so, in the present state of our knowledge, we must deem the origin of the Deccan neolithic unknown.

Extent of the Neolithic

To pass from the unknown to the known, the earliest concentration of the south Indian neolithic culture seems to have been in the southern Deccan, *i.e.*, the Krishna-Tungabhadra valley. Though there are quite a few unexcavated sites, the following

excavated ones may be noted,—Utnur (Mahboobnagar Dt.), Brahmagiri (Chitaldrug Dt.), Piklihal (Raichur Dt.), Sanganakallu (Bellary Dt.), Maski (Raichur Dt.), T. Narsipur (Mysore Dt.), Tekkalakota (Bellary Dt.), Palavoy (Anantapur Dt.) and Hallur (Dharwar Dt.). Of these Utnur is the only one that had a pure neolithic culture and nothing else. All the others started with a neolithic phase, which in the later stage was found to be associated with a chalcolithic culture. After the amalgamation the combined culture appears to have spread north to the Godavari valley—*e.g.*, to sites like Nasik, Nevasa, Tekwada and Daimabad—and south to the Kaveri area—*e.g.*, Paiyampalli (North Arcot Dt.). Except one site none has been excavated in Tamilnadu. But indications are that at least the northern districts of Tamilnadu contain possible sites that will yield fruitful results. The south Indian neolithic culture thus flourished all over the Deccan and possibly northern Tamilnadu, minus the coastal regions and the extreme south of the peninsula.

Content of the Neolithic Culture—Village Settlement

Neolithic man's life was a settled one in houses and villages. As already pointed out, the first village settlements were made on hill-terraces, sometimes in natural caves but mostly in round, occasionally square, dwellings. Bamboo screen, plastered with a mixture of clay and cow-dung, went round thick wooden posts about three feet in diameter. The roof was thatched with dry grass or palm-leaves. The floor was paved with flat stones, bonded with clay and plastered with lime. About fifteen feet across, the floor had a hearth—an unpretentious fire-place, made up of either three stones or a pit dug in the ground. A dozen huts of this type, each capable of accommodating half a dozen persons, stood on a single terrace and usually twenty such terraces with a total population of roughly 2000 souls made up a neolithic village on the hill-top. Besides hill-tops, foot-hills and sometimes river-banks too were chosen by neolithic man for founding his first village settlements.

Agricultural Economy

The economy was based largely on animal-husbandry and agriculture, though hunting and food-gathering to some extent still continued. The domesticated animals that were herded were

humped cattle, goats and sheep. As already stated, agriculture with the aid of artificial irrigation was practised on the terraces and also on the lower ground to produce mainly finger-millet and horse gram. Rice does not seem to have been known. Vegetables must have been grown and forest fruits must have been picked. The flesh of domesticated animals must have been eaten in addition to wild game.

Pottery

Pottery appeared for the first time in south India as a neolithic invention. The typical ware was black or grey, burnished or unburnished, sometimes painted with red ochre. Storage jars of large size to hold grain or water were common; they stood on three legs. Dishes, bowls sometimes with a four-legged pedestal, and cups were other types. Some pots had hollow bases and studs, lugs and loops for handles. The pottery was mostly hand-made, sometimes on a primitive turn-table. It was micaceous and low-fired in a bon-fire kiln with no control of firing. Hence besides grey and black other shades like red, orange, buff, yellow, etc., appeared. Sometimes there were dressings and washes, applied before or after firing. There was not much of design except bands, vertical and horizontal strokes in red ochre. Incised pattern was seen. The ware was mostly primitive, but some sophistication may be noticed in burnish, handles and bases.

Stone Industry

Of weapons and tools the most characteristic were stone axes with pointed butt, so well ground as to exhibit a fine polish, on account of which the entire culture is also known as 'Polished stone axe culture'. It took some doing to get the requisite degree of polish. It has been estimated that nothing less than a fortnight's grinding was needed. Other stone tools were hoes, anvils, adzes, wedges, chisels, ring-stones, picks, querns, rubbers, hammer-stones, sling-stones and grinding stones, the last distributed plentifully in their natural state on the hill-sides.

Besides the heavy tools, there were microlithic ones like arrow-heads, spear-heads, points, etc., in association with blades. This microlithic industry made use of fine-grained material like agate and chalcedony, the cores of which were very small. Whenever suitable material was available long blades appeared of chert,

for instance, at Brahmagiri, Piklihal, etc. There has been an argument as regards a possible connection between the blade industry and the other tools. Some have maintained that the neolithic people owed their knowledge of blades to the chalcolithic folk, while the other tools came down from an earlier hunting tradition in the microlithic age. But even in this earlier age blades and the other tools were found together. In a yet earlier age, sandwiched between the middle stone age and the microlithic age only blades were known. The association of blades with the other tools that started in the microlithic age persisted through the neolithic into the megalithic until iron completely took over. Blades, in fact, were primary tools from which the other retouched secondary tools were made. There is evidence, though not plentiful, in the Deccan itself of the age—equated with the European upper palaeolithic, though not chronologically,—when the blade industry appeared. Bruce Foote's blade collection from Kurnool has disappeared. But a search of Kurnool and Chittoor Dts. would be profitable. Data, however, are ample for the microlithic age. Microliths have turned up in large numbers all over Andhra. The evidence for blades and microliths, it may be noted, is within the area of the neolithic culture. Hence the probability of even a local origin for the neolithic blade industry, descended from a much earlier age, and of its independence from the chalcolithic blade industry.

Burial Customs

Neolithic man's belief in a life hereafter could be deduced from his burial customs. Burial urns were used either horizontally or vertically for depositing bones after excarnation through exposure. In the case of adult burials more than one urn were used. A number of small pots with food-stuffs were placed in the burial urns. The burials were made under house-floors.

Artistic Temperament

The artistic temperament of the neolithic people could be judged from the etchings and bruisings of men and animals on rock shelters and from exquisite pin-hole decorations on pottery.

Anthropological evidence Misleading

What do anthropologists say about neolithic man? Two skulls from Piklihal were supposed to be akin to the Dravidian-

speakers who inhabit south India today. These two skulls came from Allchin's upper neolithic dating after the arrival of the chalcolithic culture on the scene. The skulls, therefore, may not belong to the neolithic but to the chalcolithic population. The remains from Brahmagiri and Maski, which have been analysed, should also be taken into account as they represent the composite neolithic-chalcolithic culture. Of the eight Brahmagiri skulls four were said to represent the Scytho-Iranian and the others proto-Australoid types. Out of the eighteen broken and deformed Maski skulls three racial types have been isolated,—the Scytho-Iranian, the proto-Australoid and a type similar to the Al Ubaid skulls. Some scholars think the proto-Australoid type represented neolithic man. The conclusions are based on anthropological notions which are no more valid. This apart, the material is too scanty and too damaged to throw any light on the nature of the neolithic population.

Neolithic Legacy—Co-operative Effort

Whoever neolithic man was, he had far advanced from the food-gathering or food-hunting stage as testified to by the excavations at several sites. Even in the hunting stage a certain amount of organization of collective endeavour was necessary. But that need was considerably enhanced in the neolithic period. The very fact of living in settled communities led to co-operative effort, without which, for example, huge boulders of stone could not have been moved up the hill-sides to the top on the principle of inclined plane and lengthy stone avenues could not have been constructed for leading rain water from terrace to terrace in a scheme of artificial irrigation. Furthermore, there could very well have been common herding in common stockades and common grazing too. For all this social cohesion was required. To ensure this an administrative machinery with a hierarchical set-up, however rudimentary, must have been devised. Neolithic man in south India thus laid special stress on the social aspect of his existence.

Modern Indian largely Neolithic

It is significant to note here the debt the south Indian of the present day owes to his neolithic ancestor. It was he who took—wherever he might have come from—the first big stride in cultural

progress. The ideas he fashioned,—village settlement—hut habitation, food production, terrace cultivation, irrigation, animal husbandry, stock-breeding, dairy farming, pots and pans, stone industry like querns and rubbers, burial habits like funerary goods and corporate endeavour—have persisted during the last 4000 years.

CHAPTER 4

CHALCOLITHIC KALEIDOSCOPE

After independence, when we lost to Pakistan the sub-continent's prehistoric show-pieces, namely, Harappa and Mohenjo-daro, the Archæological Survey of India, aided by universities, instituted a frantic search for Harappan sites particularly in Kathiawar-Gujarat, where surface indications had shown long ago Harappan traces. The search extended from the Kathiawar peninsula to the mainland and resulted in the discovery of a number of post-Harappan sites,—apart from Harappan ones,—with a culture that has been given the name of 'chalcolithic'.

Terminological Controversy

Objections have been raised to the use of the word 'chalcolithic'. According to some, if a culture is acquainted with copper it should be called copper culture and not chalcolithic. In most ancient cultures that knew copper the metal was rare. In fact copper could not completely replace stone. Hence the invention of the term 'chalcolithic' which describes correctly the prevailing situation. In India, perhaps, only, at Ahar (south-east Rajasthan) was there a copper culture.

Some other writers have said that a culture that has only limited copper but is mainly dependent on stone and boasts of no more than a village economy, should be called neolithic and not chalcolithic. According to them, the mere possession of a few copper tools does not show the possession of a knowledge of metallurgy, which signifies not beating up native metal into tools but casting them out of metal obtained by smelting the ore. The few copper tools, they say, found in the chalcolithic culture of central India and the Deccan, specially, do not give evidence of a knowledge of metallurgy.

True, the copper tools are limited in number in certain sites but they are not made of native copper but of ore, which was obtained in Rajasthan. At Ahar there was enough evidence of smelting operations. Ahar knew no stone. It was obviously from Rajasthan that the sites further south got their copper tools.

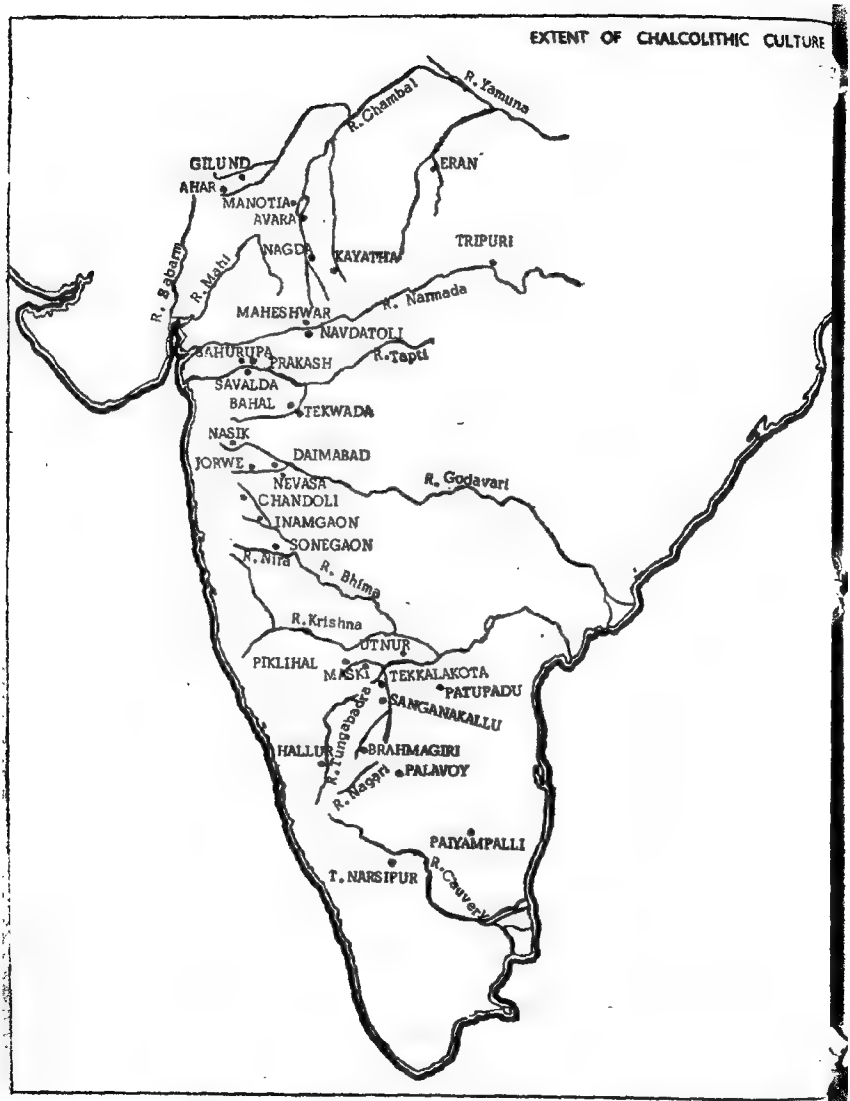
The distance from the source of origin of the metal and the lack of sufficient purchasing power precluded wider use of copper and necessitated greater dependence on stone. This apart, calling a culture that knows copper neolithic would lead to endless confusion.

The Chalcolithic economy was based, it is true, on village settlements. But they were more prosperous than pure neolithic ones. There was trade. River sites were getting more popular, thus leading to better communications and opening up of new areas. Compared to the neolithic, the chalcolithic-microlithic industry had a larger percentage of blades as against retouched tools—clear evidence of less dependence on a hunting environment. New crafts like bead-making, figurine manufacture, etc., were initiated. Above all there was knowledge of writing as proved by graffiti. The chalcolithic economy had become semi-urban.

Then again, if we were to call the chalcolithic culture of Rajasthan, central India and the Deccan neolithic, by the same token we would have to give a similar name to several cultures in west Asia like Al Ubaid, a proposition which hardly any archæologist would countenance. And so, all things considered, the word 'chalcolithic' is the most suitable one for the culture we are about to describe.

Assessment of Chalcolithic Culture Overdue

The chalcolithic culture extending southwards from south-east Rajasthan has presented such a wide variety of detail with characteristics, peculiar to regions and even particular sites, that many a scholar has shied away from the task of proper over-all assessment, while others have got just bogged down in the details. Wheeler probably had the chalcolithic chaos in mind, when he called some-time ago for a halt to further addition to the untidy heap and for a timely evaluation of the results obtained so far. The task has been taken in hand but by too few and too perfunctorily. Compared to our evidence of the other cultures of the peninsula we know much more of the chalcolithic way of life. And yet problems like the identity of its builders and its interactions with other cultures are nowhere near solution. The thread, however, of unity that seems to run through the regional and local


EXTENT OF CHALCOLITHIC CULTURE
R. Yamuna
R. Chambal
GILUND
AHAR
MANOTIA
AVARA
ERAN
NAGDA
KAYATHA
TRIPURI
R. Babary
R. Mahi
R. Narmada
MAHESHWAR
NAVDATOLI
SAHURUPA
PRAKASH
R. Tapti
SAVALDA
BAHAL
TEKWADA
NASIK
DAIMABAD
JORWE
NEVASA
R. Godavari
CHANDOLI
INAMGAON
SONEGAON
R. Nira
R. Bhima
R. Krishna
UTNUR
PIKLIHAL
MASKI
TEKKALAKOTA
PATUPADU
SANGANAKALLU
HALLUR
BRAHMAGIRI
R. Tungabadra
R. Nagari
PALAVOY
PAIYAMPALLI
T. NARSIPUR
R. Cauvery

variations—a vast kaleidoscope indeed—ought to help in the task of solution.

General Chalcolithic Distribution Pattern

In a number of sites in the Deccan the chalcolithic culture was found mixed with the neolithic which had been in existence already. In other sites, however, the composite culture was noticed right from the start. The chalcolithic, was not confined to the Deccan. In fact, the Deccan chalcolithic was part of a wider complex that comprised, in addition to the Deccan, central India and south-east Rajasthan. An over-all pattern was that the neolithic element of the composite culture diminished towards the north till it was almost non-existent beyond peninsular India, while the chalcolithic element got less and less towards the south until it hardly showed itself in Tamilnadu. Conversely the chalcolithic element was stronger in the north, while the neolithic dominated in the south.

Extent of Chalcolithic Culture

With the discovery of new sites every now and then our knowledge of the extent of the chalcolithic culture is constantly growing. No list of sites, hence, can be final. Nevertheless, the following sites may be noted. In Rajasthan in addition to the well-known sites of Gilund and Ahar may be cited Banson, Champakheri and Sirdi in Chitorgarh Dt. and Balathol, Darauli, Gadriawas, Kheri, Rupravali and Terwat in Udaipur Dt. An important addition to the central Indian sites of Maheshwar, Navdatoli, Nagda, Tripuri and Eran has been Kayatha. In the northern Deccan, however, to the original sites of Prakash, Bahal, Daimabad, Tekwada, Nevasa, Nasik, Jorwe, Sonegaon, Bahurupa and Chandoli have been added several, namely, Balhava, Shodada, Karda, Pargaon, Pir, Samodi and Surpar in Dhulia Dt., Neri-Budrukh in Jalgaon Dt., Mingdewadi about 72 kms. from Poona and Sardawadi on the Poona-Sholapur road. In the southern Deccan, besides Brahmagiri, Piklihal, Hallur, Tekkalakota, Palavoy, T. Narsipur, Sanganakallu and Maski may be mentioned Budidepadu, Singanapalli, Panchikalapadu, Patupadu, Sivavaram, Pusalapadu and Ramavaram in Kurnool Dt., Belagodanahalu

and Lakshmipur in Bellary Dt., Hadargiri and Kunbev in Dharwar Dt., Anegondi, Nandihalli and Yabbalu in Raichur Dt.

Common Content of Chalcolithic Culture—Agricultural Economy

The main characteristics of the south Deccan chalcolithic have already been noticed. While each region—sometimes even a site,—had special peculiarities, yet certain traits were common to the whole chalcolithic area. The chalcolithic folk settled mainly on black soil eminently suited to cotton growing, hence they must have taken to wearing cloth. They lived in mud and mud-brick houses in villages. Their economy was based on animal husbandry, centred mostly round cattle—they reared also sheep, fowls, pigs and dogs,—and cultivation of food-grains. While at the start they grew wheat, they subsequently concentrated on rice, jowar and millets. Besides cotton manufacture they knew flax and silk manufacture. They supplemented their diet with vegetables and game. They evidently ground spices on saddle-querns with rubbers,—these were not used for grinding grain, as some think,—to make their food tasty. With slings and sling-balls they chased the birds off their ripening grain and even hunted them for food.

Tools and Weapons

Copper tools and weapons were scarce in relation to microliths, of which there was a profusion; they were generally of fine-grained materials like agate, chalcedony, etc. There was a good percentage of blades. These tools were turned out on the crested guiding ridge principle that ensured mass production.

Pottery

The characteristic black-on-red pottery was of coarse fabric and generally slender section. It had a red slip on which were executed, usually in black pigment, geometric, plant and animal designs. This pottery is called Malwa ware in reference to specimens from central India, and Jorwe ware,—found earlier in central India than at the type-site—in regard to those from the Deccan. The essential difference between the two wares lies in the latter's strict adherence to geometric designs alone. From a variety of pottery forms note may be taken of bowls, basins, jars, dishes-on-stand, bowls-on-stand, perforated pots, double pots and spouted vessels. The painting repertoire consisted

of vertical straight and wavy lines, slanting straight and wavy lines, horizontal straight and wavy lines, dots, triangles, diamonds, circles, sigmas, lattices, loops, axe-designs, palm-leaf, plants and animals. Group-designs consisted of horizontal bands of single or multiple decorative elements bordered or separated by one or a group of straight horizontal lines and of space-fillers of different elements.

Graffiti on Pots

The graffiti on pottery are evidence enough of the existence of a knowledge of writing among chalcolithic people. This knowledge, however, was confined apparently to a few. Literacy was not widespread. The graffiti marks,—at least some of them,—bear resemblance to the signs of the Harappa script. Their values, nevertheless, like those of the latter, have yet to be determined in a manner acceptable to all.

Religion

We know very little about the religious life of the chalcolithic folk. Pure chalcolithic burials have not turned up. Those that have, pertain to the neolithic-chalcolithic composite culture. The chalcolithic people used human and animal figurines. It is, however, not clear if they were cult objects. Nothing like a temple or shrine has been identified. In fact there is no evidence that religion was an organised force. It was apparently a private affair.

Beads

The chalcolithic people decorated their bodies with beads of terracotta, faience, precious stones and precious metals.

Special Regional Features—Pottery

Special regional features are noticed mostly in south-east Rajasthan. Of ceramics may be mentioned black-and-red ware, both plain and white-painted, of Ahar, Gilund, Banson, Champakheri, Sirdi, Balathol, Darauli, Gadriawas, Kheri, Rupavali and Turwal. Incidentally, this ware was seen also at Eran and Nagda on the Chambal, at Navdatoli on the Narmada, at Prakash on the Tapti, at Bahal on the Girna, at Chandoli in Maharashtra and even in southern Deccan, *e.g.*, at Tekkalakota (Bellary Dt.) and Kesarapalli (Krishna Dt.).

Other wares were buff, grey, red, lustrous red and cream-slipped. Lustrous red ware was found in Ahar and outside Rajasthan at Navdatoli, Prakash, Bahal, Chandoli and Singanapalli. Cream-slipped or white-slipped ware with designs in black of dancing humans and spotted animals were picked up at Navdatoli and Chandoli. Vases with strap-handles as well as the conoid and concave-sided cups of Navdatoli and the long channel-spouted vessels of Navdatoli, Daimabad and Chandoli were other noteworthy ceramics. One more speciality was vessels with animal-headed handles from Ahar.

Copper Tools Abundant

Another peculiar feature of the Rajasthan chalcolithic was the almost complete absence of microliths at some sites like Ahar and Gilund,—at some other sites microliths turned up with copper tools. Copper was plentiful in Rajasthan. Some have suggested with good reason that Ahar culture should be called copper and not chalcolithic culture.

Special Beads

Yet another speciality of the Rajasthan area was the occurrence of beads with peculiar compartmented decorations.

Chalcolithic Chronology

A word about chalcolithic chronology.

A dozen sites,—Ahar, Kayatha, Eran, Navdatoli, Nevasa, Chandoli, Sonegaon, Palavoy, Tekkalakota, Hallur, Sanganakallu and T. Narsipur,—have yielded c.14 dates. They largely prove that the chalcolithic culture was post-Harappan.

Problems immediately arise from the fact that the earliest dates have come from Ahar and Kayatha. There are two series of dates for Ahar,—the earlier ranging from 1827 B.C. to 1273 B.C. and the recent from 2144 B.C. to 1876 B.C. There is a vast discrepancy between the two sets of dates and a new set of samples will have to be processed. Meanwhile some scholars have summarily rejected the latest dates and perhaps they are right. Ahar I-C had some lustrous red ware specimens. The origin of this ware is generally traced to Rangpur (in Kathiawar) where its earliest occurrence was in the sub-period II-C, which, being post-Harappan, could hardly be dated prior to 1800 B.C. as shown

later. Nevertheless Ahar seems to have had Harappan beginnings. The original excavation at the site and the work at the kindred site of Gilund produced mud-brick houses at the two sites and imposing mud-brick walls and a huge burnt-brick structure of almost Harappan dimensions at Gilund. Even the animal figurines were so well wrought that they recall Harappan rather than post-Harappan specimens.

Kayatha, 15 miles east of Ujjain, has yielded an impressive array of c.14 dates from 2105 B.C. to 1300 B.C. Periods I and II had black-on-red and other pottery with Harappan affinities. Period II produced even a Harappan seal. In this period appeared painted black-and-red ware. Period III was characterized by the so-called Malwa and Jorwe wares. It looks as if Period I and at least a part of Period II were Harappan.

From where the Harappans went to Kayatha and possibly south-east Rajasthan is not clear. To judge by the present evidence it does not seem likely that they could have gone from Kathiawar, since the earliest date so far available is only 2080 B.C. for the beginning of Harappan Lothal (sub-period I, phase A). In any case, the closing phases of Kayatha, as also Ahar and other south-east Rajasthan sites were definitely chalcolithic and post-Harappan.

In central India Eran presents a problem. Of the earlier c.14 determinants one sample from an early level gave a date of 2073 B.C. Among recent determinants the earliest date available is only 1500 B.C. It is not clear how early were the levels from which these samples came. The date of 2073 B.C. does not seem consistent with other available dates. Navdatoli too has provided us with certain inconsistent dates but the over-all picture is fairly clear. The culture could be deemed to have started in mid-17th cen. B.C. Sonegaon's beginnings go back to early 14th cen. B.C. Chandoli and Nevasa in the northern Deccan apparently began about the middle of the 14th and early 13th centuries B.C. respectively.

While the above mentioned dates are for sites outside the main neolithic area, in the southern Deccan, where the chalcolithic in several sites overlay the neolithic and mixed with it, especially in the Krishna-Tungabhadra valley, it is difficult to fix the date of chalcolithic arrival. The difficulty arises because the excavation reports do not properly distinguish between pure neolithic and

neolithic-chalcolithic strata. And yet the date of 1610 B.C. (c.14) for Tekkalakota (neolithic-chalcolithic) gives a fair indication. The neolithic-chalcolithic culture persisted upto 1105–955 B.C. (c.14), when the megalithic took over. Further south in Tamilnadu where the neolithic-chalcolithic culture spread and was followed by the megalithic, the latter began only around the middle of the 1st. millennium B.C. And so, the span of the chalcolithic culture from its start in south-east Rajasthan to its end in Tamilnadu was about 1300 years, from approximately 1800 B.C. to 500 B.C.

Chalcolithic Anthropological Data

Who were the chalcolithic people? Anthropologists have tried to answer the question. We have an idea of the burials in the Deccan but not in south-east Rajasthan and central India. The skeletal material from Nevasa, Chandoli, Brahmagiri, Tekkalakota and Maski have been studied. A single skull and some other skeletal remains from Nevasa have been said to belong to a primitive type like the one now living in the jungles of the Deccan. The same verdict has been given on the Chandoli materials. The anthropological data from Brahmagiri and Maski seemingly pertained to the mixed neolithic-chalcolithic culture. The Brahmagiri material was in a very badly damaged state. Of the 8 skulls four were supposed to belong to the Scytho-Iranian type and the others to the proto-Australoid. If the Brahmagiri skulls were quite damaged the Maski ones were worse. Not one of the 18 skulls could yield any proper measurements and yet three racial types have been distinguished,—the Scytho-Iranian, a type akin to the A1 Ubaid skulls, and the proto-Australoid. From these data some scholars have drawn the conclusion that the chalcolithic element in the combined neolithic-chalcolithic culture was west Asian. The Tekkalakota remains have been pronounced to be Mediterranean like the modern Dravidians. The so-called racial types have no bearing on reality. Apart from this the available material is too unsatisfactory to give any worthwhile information on the nature of the chalcolithic population.

Chalcolithic Contact with the Neolithic

The chalcolithic people, it has already been said, came into intimate contact with the neolithic folk in the Deccan, particularly in the south. The archæological record shows that the contact

was not the result of struggle or conquest but of a genuine adaptation by one to the other's way of life. The two sets of cultural elements more than co-existed. Each people took up the other's ideas and made them its own, thus forming a composite culture.

Northward Spread of the Composite Culture

This composite culture spread north and south again adapting itself to the new environment. It has often been suggested that the northward push of the neolithic was arrested at Daimabad, its northern-most outpost,—from whence its influence trickled into central India,—by the south-advancing chalcolithic. If that were so, Daimabad ought to have started as a purely neolithic site. But it began with the composite culture. The only reasonable explanation is that the composite culture went to Daimabad, unless it is assumed that the two cultures arrived there from opposite directions at the same time—a far-fetched assumption, to be sure. c.14 dates clinch the issue. Sonegaon, Chandoli and Nevasa in the northern Deccan began with a mixed culture. In Sonegaon, the southern-most of the three, it started in 1375 B.C. (c.14), in Chandoli in 1330 B.C. (c.14) and in Nevasa, the northern-most, in 1253 B.C. (c.14). In its spread to the north the composite culture lost more and more its neolithic element the farther it went. For instance Daimabad showed a stronger neolithic element in the earlier strata of occupation, while the same element weakened at Nevasa and could be seen only in traces at Nasik, Jorwe and further north upto central India. At Daimabad and Nevasa the culture was composite right from the start and at Navdatoli and Eran stray neolithic traits appeared only in the later stages.

As the mixed culture spread to the south into the Palar basin, the chalcolithic element got weaker, became practically non-existent. For instance, at Paiyampalli in North Arcot Dt. the whole cultural assemblage was neolithic.

Southward Spread of Composite Culture

It is not safe to draw conclusions from the findings at a single site. Yet, while awaiting further data, we may make a few suggestions. Those who moved down south seem to have been the neolithic-chalcolithic people who put small stone blades of agate, jasper and chert to domestic use. The heavier stone implements

like axes, wedges, scrapers, etc., served both their domestic and other purposes like that of clearing the jungle, etc. Among the pots occurred, significantly, bowls with shortened channel-spouts. This ceramic variety was unknown to the neolithic and appeared in the southern Deccan after the arrival of the chalcolithic. This apart, the c.14 date of 1485 B.C. for Paiyampalli would point to the migration of a mixed population, since sometime before that date the chalcolithic culture had mingled with the neolithic in the Krishna-Tungabhadra region, from where, again, the mixed culture spread. There is certainly no sign of the Paiyampalli culture having started *in situ*. Furthermore, there is a linguistic reason for considering the migration to Paiyampalli as that of a mixed people. To anticipate here some conclusions to be drawn later would be out of context. The mere fact of the existence of linguistic corroboration is now recorded and the argument will be subsequently detailed in the appropriate place.

The adequacy,—even superiority over copper,—of the heavier stone tools in the densely wooded region of the Krishna-Tungabhadra and the area further south (apart from their distance from the Rajasthan source of origin of the metal) explains the paucity of copper implements in the former and their total absence in the latter. The result is that in the sequence of cultures the iron age seems to follow the neolithic rather than the neolithic-chalcolithic in some sites of the southern Deccan and in the entire region further south.

Problems posed by the Composite Culture

The intermingling of the two cultures and the spread of the composite one have given rise to quite a few problems that await solution. For example, Daimabad and Nevasa exhibited a composite culture from the start and the nearby sites of Jorwe and Nasik hardly did. But how did Bahal IA further north show apparently a pure neolithic culture?

Then again, there is the problem of the chronological horizons of Bahal and Brahmagiri. Bahal IA had Brahmagiri type grey ware, which at Brahmagiri started with IA and continued till the end of IB. At Bahal, after a clear break, IB with chalcolithic black-on-red painted pottery and other items followed. This culture was seen at Brahmagiri in period IB. This could show

that Brahmagiri should have had a considerable life-span had the grey ware gone to Bahal from Brahmagiri and the black-on-red to the latter after the former. Or, perhaps, Bahal IA and Brahmagiri were both indebted, not necessarily at the same time, to different sources for their grey ware and possibly for the black-on-red too. Intensive work at some sites and more c.14 dates should help solve the problems connected with the mechanism of diffusion and interaction of cultures in the Deccan.

Significance of Term 'Neolithic-Chalcolithic'

This is perhaps the place to explain the use of the word 'neolithic-chalcolithic'. Some writers have said that in view of the paucity of copper—at some sites it was hardly seen—the entire complex should be considered neolithic. Technologically speaking, when a neolithic culture obtains a knowledge of copper, it ceases to be neolithic. In fact, the term 'chalcolithic' would be the technically correct one to describe the Deccan situation where the neolithic got to know copper from the chalcolithic culture. But we are not using the compound word 'neolithic-chalcolithic' in any technical sense, *i.e.*, to connote a particular stage of culture. We use it in a descriptive sense. When the chalcolithic came into contact with the neolithic in the Deccan, the distance from the Rajasthan source of copper precluded the use of the metal to any appreciable degree. In fact, the typical neolithic ground stone industry was dominant. The neolithic population reached a higher stage of cultural development in general than before, while the chalcolithic section depended more on stone than copper. The compound word 'neolithic-chalcolithic' seems to describe this state of affairs better than the word 'chalcolithic'. However, the culture, described so far was chalcolithic in Rajasthan and central India and neolithic-chalcolithic in the Deccan, specially southern.

Deccan's Cultural Advance due to Chalcolithic Element.

The chalcolithic culture which was an imposition on the neolithic in the Deccan could boast of its own well-developed traits. It had its own agricultural economy, its own ceramics with an amazing variety of form and decoration, its own metal-work, stone industry, bead manufacture, figurine fashions and above all its claim to literacy, which obviously ensured its dominant role

in the mixed cultural set-up. By combining with the neolithic the chalcolithic gave a push to cultural progress in the Deccan. True, both boasted of only a village economy, but the chalcolithic economy was already ahead of its neolithic counterpart in that it was semi-urban. The chalcolithic folk settled on river-banks and thus opened up vast vistas of trade, communication, water-supply, food, etc. This automatically led to the emergence of leisured classes given to arts and crafts—chalcolithic pottery with its profusion of form and design is a case in point. With trade came literacy and expansion. These advantages the chalcolithic folk passed on to the neolithic and thus set the Deccan on the road to full-fledged urbanization.

CHAPTER 5

KATHIAWAR COLLAPSE AND COME-BACK

Chalcolithic chronology clearly indicates that the culture travelled from the north to the south. But even in the north, say, in Rajasthan, it does not seem to have been indigenous. Where did it come from?

Harappa's end in Kathiawar-Gujarat

The only nearby region which could have given rise to the chalcolithic culture around the 19th cen. B.C. was Kathiawar-Gujarat. Its proto-history began with the Harappan civilisation; but what concerns us here is its end and the aftermath. Extensive floods not only in Kathiawar-Gujarat but also in Rajasthan and the Indus valley brought the Harappan civilisation to a close sometime after the beginning of the 2nd. millennium B.C. C.14 dates about 1866 B.C. for the beginning of Lothal B (post-Harappan civilisation), of 1760 B.C. for the top-layer of Mohenjo-daro,—it was apparently of the post-Harappan Cemetery H and Jhukar cultures, and hence the Harappan culture at Mohenjo-daro would have ended around 1865 B.C., c.14 of 1864 B.C. for the end of the mature Harappa phase at Mohenjo-daro, and 1900 B.C. for Niai Buthi with Harappan affinities at the Baluchi foot-hills in Las Bela district are quite revealing.

Sequel to Harappa in Kathiawar-Gujarat

The sequel to the Harappa story in Kathiawar-Gujarat was not the same as in the Indus valley. In the latter the start of the 2nd. millennium witnessed alien cultures that brought in new elements from outside—exotic pottery, mid-ribbed swords, socketed axes, peculiarly-wrought seals, amulets and beads. These elements were unknown in the land earlier. Foreigners obviously had taken advantage of the widespread flood havoc to deliver the *coup de grâce*. Consider *e.g.*, the Cemetery H, Jhukar and Jhangar cultures. In Kathiawar-Gujarat, however, there was no foreign raid. The Harappans came back to the sites they had left temporarily but they could not re-create the previous cultural grandeur. The poverty of

the post-Harappan culture of Kathiawar-Gujarat has to be explained not so much by flood-destruction as by external factors. The Harappan civilisation, particularly its Kathiawar limb, was mainly commercial, resting on overseas trade for its prosperity. The Kathiawar Harappans had extensive contacts not only with the Indus valley but also the land of the twin rivers. The foreigners, who raided the Indus cities, also overthrew the Akkadian empire of Naramsin, Sargon's successor, and settled in the Euphrates-Tigris valley. These aliens were not particularly cultured. They were barbarians. It was to take them long to learn the arts of civilisation, specially international commerce, from the people they had conquered. Meanwhile the Kathiawar Harappans lost their foreign trade, the very *raison d'être* of their well-being. They had to change considerably their way of life. Hence the poverty of the post-Harappan culture of Kathiawar-Gujarat. Despite the immediate cultural degeneration, the spirit of the old culture could not be suppressed for long. Its very vitality asserted itself and set in motion an evolutionary trend. This was a revival, though limited in comparison, to the original culture.

Rangpur Sequence

The archæological record bears ample testimony to the initial cultural devolution and subsequent evolution in Kathiawar-Gujarat. The key-site is Rangpur whose sequence, given below, has been more or less reproduced in 100-odd other sites.

Rangpur sequence

III — Lustrous Red Ware culture.
II C — Transitional phase of Harappa.
II B — Late or degenerate Harappa.
II A — Harappa culture.

Post-Harappan Refugee Influx from Sind into Kathiawar

The archæological record testifies to something else too. The excavator Rao's list of Harappan and post-Harappan sites, brought upto date, makes instructive reading. An analysis shows that out of nearly a hundred sites, the Harappan ones were only about a dozen, of which the important were Lothal, Rangpur, Desalpur and Rojdi. The last was founded well in the interior obviously to exploit the hinterland for purposes of foreign trade.

Lothal Dock.

Copyright: Archaeological Survey of India.

With, however, the start of Rangpur IIB post-Harappan sites sprang up like mushrooms. They were almost seventy, concentrated mostly in the interior. Sixty of them were new. A part of the population of the old Harappan sites could have gone inland to higher ground not merely to avoid further flood havoc but especially to eke out an existence away from the coast, which held no more charm for them. But these emigrants could not have accounted for as many as sixty new sites. The only possible explanation is that refugees, fleeing away from Sind in the face of foreign aggression, poured into Kathiawar and settled in the new sites.

At the end of Rangpur IIB, 25 sites were abandoned and 45 continued into IIC, when 30 new ones began. People from the abandoned sites with the aid of some from the other 45 could have founded the new ones. On the contrary these could have been due to a fresh wave of immigrants from Sind. The latter alternative seems likely in view of new ceramic patterns that appeared in IIC,—to be referred to later.

Towards the end of Rangpur IIC, 60 sites ceased to exist. Together with the 15 old sites that went into Rangpur III five new ones made up a total of 20. The new sites would easily have been founded by a part of the population of the old ones. There need have been no fresh immigration from outside.

Estimate of Refugee Influx

If the population of a post-Harappan settlement, which was no more than a small village, were, at a conservative estimate, roughly 500,—while the population of a south Indian neolithic village is surmised to have been 2000, that of a Kathiawar refugee settlement must have been much less because of the unsettled conditions,—the strength of the refugees during Rangpur IIB would have been about 30,000 and in Rangpur IIC around 15,000. These figures give a fair idea of the refugee problem faced by Kathiawar then.

Refugee Contribution to Cultural Devolution and Evolution

The refugee situation incidentally contributed its own share to the initial devolution and subsequent evolution of the post-Harappan culture of Kathiawar-Gujarat. The sizable number of immigrants, who fled suddenly into Kathiawar during Rangpur IIB, no doubt added to the general post-Harappan confusion and

the falling-off from the cultural standard. The comparatively small number of people who came in during Rangpur IIC and brought with them ceramic innovations definitely accelerated the cultural revival that had already set in and that continued even into Rangpur III.

Rangpur's Post-Harappan Economy

Rangpur IIB settlements were small. No town-planning was in evidence. Elaborate drainage was a thing of the past. From the level of city-denizens, thriving mainly on commerce, the folk had come down to that of village dwellers, subsisting solely on farming and stock-breeding. Their unpretentious houses were built of mud. The structures were shabby and did not even know mud-bricks. Period IIC witnessed a certain resilience. The dwellings were of mud-bricks, but burnt bricks were not in evidence. In period III a little prosperity was apparent. The mud-brick houses were plastered with lime-mortar and the rooms were larger.

The economy of the post-Harappans of Rangpur was based,—as stated above,—on herding and farming. Their domesticated animals were humped cattle, buffaloes, sheep, goats, dogs and donkeys. They cultivated rice and pearl millet or bajra and possibly cotton and wheat. They hunted wild game and caught fish.

Pottery

The pottery was mainly black-on-red, painted with geometric, plant and animal designs. Other wares were the plain red, painted buff, plain grey and black-and-red. The common forms were bowls, jars, basins, dishes-on-stand, bowls-on-stand, spouted vessels, double pots and perforated jars limited in number. Nearly three-fourths of the pottery of Rangpur III can be traced back in regard to form, composition and decoration to the Harappan black-on-red, plain red, painted buff, plain grey and black-and-red wares of IIA through IIB and IIC. A few vessels with deep red lustre turned up even from IIA. They gradually increased in IIB, were pretty popular in IIC and finally occupied the stage in III as the Lustrous Red ware so conspicuously that the excavator named the culture after it. This was the black-and-red ware with black interior and red exterior, resulting from inverted firing.

Forms cut across Types

We may take a closer look at ceramic form and painted designs particularly with a view to emphasising degeneracy in period IIB and evolution in IIC and III. It is important to bear in mind that the different pot-forms were turned out more or less in all kinds of ware,—the black-on-red, red, grey, buff, black-and-red and lustrous red. No particular pot form was restricted to a special type of ceramic. Some old forms were dropped and new ones emerged. The process of new forms displacing the old was gradual and in many cases the old ones coexisted with the new for quite a while.

Form Devolution

In period IIB the pottery was generally coarse—clear evidence of a falling-off in standard,—though a few finely-made specimens were not lacking. The beaker and goblet, already rare in IIA, practically disappeared in IIB; only a couple of specimens of each were picked up. The small jar and basin were losing popularity. But the bowl, dish, dish-on-stand and normal-sized jar continued to be in good demand.

Form Evolution

The concave-sided bowl of IIA became slightly thick-rimmed and straight-sided in IIB, acquired everted rim and blunt-carinated shoulder in IIC and ultimately developed deep-carinated shoulder with a concavo-convex profile in III. The carinated bowl got a ring-footed base too. The stub-handled bowl of IIA and B became rare and the few specimens of IIC were bigger with longer handles. The dish with a projecting rim and prominently carinated shoulder—quite popular in IIA and IIB—lost its carination and developed a slightly rounded rim in IIC and fully beaded rim in III. The stem of the dish-on-stand was sometimes corrugated in IIC. The dish of the dish-on-stand lost its carination and acquired a shortened rim; sometimes the dish became small but deep and the stem thin and short and cylindrical in IIC, until it ultimately took the shape of a short-stemmed bowl in III. The short-necked jar of IIA and B developed a longer neck in IIC. The large storage jar got a heavy beaded rim and flaring neck in IIC. The small jar with a constricted neck took on a bottle-neck and globular body in IIC. In IIC spouted jars with sharp-carinated

shoulders and ring-footed base appeared,—a survival from Lothal A and Harappa. Perforated jars, goblets and beakers completely disappeared in IIC. In III some jars developed convex profiles and rounded bases, some storage jars flanged shoulders, and a few deep bowls tapering sides.

Designs

Post-Harappan pottery designs were mostly Harappan—horizontal, vertical, oblique and wavy lines either single or in groups or bands, hatched diamonds, triangles and rectangles, spirals, inverted and suspended loops, loops with fronds, multiple intersecting loops and circles, derived leaf patterns, ladder, leaf, creeper, fish-scale, fish-net, peacock and deer. The typically Harappan schematization of painting in successive panels one below the other was not seen in Rangpur IIA but a single motif like peacock, hatched diamond or interlaced circle was repeated in a horizontal register in IIB and C. Schematization was revived in IIC with hatched triangles and birds. Animals and birds were stylised in IIC. The body and legs of the running deer were mere lines and the horns wavy. In addition to the stylised peacock there was the stylised bull with elongated muzzle, X-shaped horns and no eye.

Refugee-inspired Designs

The new motifs of IIC were the bull and the duck. There were no new motifs in III but greater stylisation. The sudden occurrence of the bull-design in Rangpur IIC must be attributed to refugees from Sind. The stylised bull recalls to mind an almost similar rendering in south Baluchistan, particularly in the sites of Kulli and Mehi, where, however, the eye was very prominent. Refugees from south Baluchistan must have poured into Sind before making their way into Kathiawar.

Graffiti

While inscribed seals were apparently unknown at Rangpur, writing was confined to graffiti on pots. Small wonder, since trade, the mainspring of writing, had dwindled. There seems to have been a trend to simplification in Rangpur IIC and III. The number of signs tended to decrease.

Tools

Copper implements were scarce. The Rajasthan source of copper had been affected by recent events and the people's purchasing power had fallen. The use of stone tools increased. In this regard the story of the stone blade industry is quite instructive. The parallel-sided long chert blade had been characteristic of Harappa culture anywhere in the sub-continent, *e.g.*, at such far-flung sites as Lothal, Rangpur, Kalibangan, Mohenjo-daro, Harappa, Rupar, Alamgirpur and a host of others. They all received it apparently from one source, Sukkur-Rohri in Sind. After the Harappan occupation at Rangpur a fine-grained chalcedony short blade appeared. The Sukkur-Rohri source of chert had been exhausted due to foreign aggression and the Rangpur post-Harappans had to take to easily available local material, namely, chalcedony. The blade had to be shorter than the chert model because the fine-grained core was smaller. There was, however, no difference in manufacturing technique, *i.e.*, the use of the crested guiding ridge, since the tradition was already there.

Beads

Beads of terracotta, steatite (disc-beads need special emphasis) and semi-precious stones adorned the bodies of the post-Harappans of Rangpur. The use of beads was nothing new; it was an integral part of Harappan life as evidenced by bead-manufacturing factories, *e.g.*, at Chanhu-daro and Lothal.

Figurines

There were human and animal terracotta figurines at post-Harappan Rangpur. The animals represented were mostly bulls and dogs. Other terracotta objects were bird-whistles, marbles and toy-carts. They were all part of the Harappan legacy.

Religion

Organized religion was apparently non-existent. Religion was probably looked upon as a private affair. Even here cult objects like Mother Goddess figurines, which had an important place in the Harappan religion in the Indus valley were conspicuous by their absence in Kathiawar.

Regional Trends in Kathiawar

The 100-odd sites that reproduce in a general way the Rangpur sequence, like Lothal, Prabhas, Koth, Kinderkhera, Rojdi, Pithadia, Amra, Lakhabawal, etc., making up a total of eighty in Kathiawar, more than a dozen in Kutch, besides Kanasutaria and Sujnipur to the north of Lothal on the way to Rajasthan, in addition to Mehgam, Telod, Bhagatrav and Hasanpur on the mainland coast of Gujarat, largely agree in regard to the content of their post-Harappan culture. Not all of them, however, produce the entire Rangpur sequence from IIB to III. They also show certain peculiarities, particularly in the most characteristic item of any culture, namely, ceramics. This was bound to happen, since, with the end of an imperial regime, standardisation broke down and regional tendencies asserted themselves. All the more so in Kathiawar-Gujarat, where even in the hey-day of imperial Harappa, different standards of bricks, weights, street-widths, etc., prevailed side by side, as *e.g.*, at Lothal, Rangpur, etc. The very vastness of the Harappan empire contained the seeds of regional autonomy. Central authority slackened and local pulls worsened. The Harappa civilisation had, perhaps, over-reached itself. This, according to some, led to the Indus valley Harappans being left in the lurch by their brethren from the other regions in the face of foreign aggression. If regional tendencies tried to come to the fore even under central Harappan control, small wonder they asserted themselves vigorously with the removal of Harappa's imperial hand. This explains the emergence of Prabhas ware, occurring in period IIB at Prabhas,—which was only a devolved post-Harappan ware with certain local traits like the incurved and bevelled rim and panelled painted patterns. This ware turned up also at Rojdi and other places. There was also the cream-slipped ware from Rojdi. Lustrous red ware appeared in Prabhas II, Pithadia, Somnath II, Kanasutaria and Sujnipur *en route* to Rajasthan and Hasanpur in Gujarat. Did it develop in these sites or come from Rangpur? Probably the latter, considering the evolution of the ware was so well marked at Rangpur.

No Foreign Element in Kathiawar

The Rangpur and allied sequences point clearly to the fact that in post-Harappan times there was a sudden falling-off in almost every item of material culture but that soon a gradual

picking-up followed though not in any outstanding manner. The record shows that the post-Harappans were at first suddenly faced with a new situation that almost staggered them but they quickly regained their wits and gradually adapted themselves to the changed circumstances. No foreign element had any hand in these changes. Strange it is then that, after elaborating this point, Rao, the excavator of Rangpur, should find the horse in Rangpur III,—also in post-Harappan Lothal B—and discover a likeness between the rolled-top pins of Rangpur and Jhukar. Rao could be right in placing the horse at a late level in Mohenjo-daro, where the animal could have been introduced by foreigners. But there is no place for it in Kathiawar-Gujarat, where there was no alien aggression. The figurines do not show the typical mane. As the bodies are missing one cannot examine the bushy tail. The so-called Kathiawar horse was probably the wild-ass or the onager, which still roams in its pristine state in the Rann of Kutch. As for the rolled-top pins, the Rangpur specimen is quite different from the Jhukar ones, which might have been foreign.

Post-Harappan Chronology

A word about Rangpur chronology. Rao's dates need to be advanced. Unprecedented floods in all the river-systems of the western and north-western sub-continent put an end to the Harappa civilisation not only in Kathiawar-Gujarat but also elsewhere. In Kathiawar we have an approximate c.14 date of 1866 B.C. for the start of Lothal B (post-Harappan). The same date should apply also to the beginning of Rangpur IIB (post-Harappan). Then again the c.14 date of 1730 B.C. for Kayatha III, definitely post-Harappan, in central India, and a possibly high date for Ahar, whose IC could have received the lustrous red ware only from Rangpur IIC at the latest, point to an up-dating of the Rangpur sequence. Hence the following post-Harappan Rangpur chronology.

III — 1750 to 1400 B.C.
IIC — 1800 to 1750 B.C.
IIB — 1866 to 1800 B.C.

These dates indicate that a little after the start of the 2nd. millennium B.C. the Harappa civilization collapsed in Kathiawar-Gujarat; but the post-Harappans after an initial set-back of about half a century staged a come-back, though not spectacular —as

explained earlier—which lasted till about the middle of the millennium. From urbanization there was a sudden descent to village economy but soon there was an ascent towards semi-urbanization.

CHAPTER 6

KATHIAWAR KEY

The chalcolithic culture of south-east Rajasthan, central India and the Deccan, it is acknowledged by all, did not start *in situ*, since even in Rajasthan, from where the culture began its southward movement, it appeared full-fledged after the beginning of the 2nd. millennium B.C. The situation, however, at Ahar and Kayatha (central India) is not quite clear. The only close-by region—we have already hinted—which could have given rise to it about that time was Kathiawar-Gujarat, the state of whose culture then we have already detailed. The mere fact, however, that the post-Harappan culture of Kathiawar-Gujarat was contemporaneous with or even a little earlier than the chalcolithic culture will not prove the latter's indebtedness to the former in regard to not only origin but also content. There is need to show resemblances between the cultures at least in the main aspects, to account for the chief differences and to derive the chalcolithic from the post-Harappan culture. Above all it is necessary to find out why the latter sparked off the former. This seems possible.

Wherein Lay Chalcolithic Origin?

While the ostensible cause of post-Harappan cultural devolution was widespread flood havoc, the effective one was the loss of overseas trade with no prospect of early revival. The sea, therefore, no more lured the post-Harappans. They had to take to new avocations. The only one easily available was farming with stock-breeding. In every urban civilisation the farmers of the satellite villages supported the non-agricultural city-dwellers,—craftsmen, traders, artisans, administrators, *literati*, etc. Once the city-state collapsed, the secondary producers in the economy had no immediate prospect of employment except in primary production. But the limited arable land could not absorb the sudden fresh influx. Hence migration was the only course open to the unemployed. Even some primary producers could be involved in the migration. With the huge slump in prosperity there was no surplus to go back into production. And so the operation of the law of diminishing returns would drive quite a few farmers

to virgin land. This was the fate of many of the post-Harappans. Moreover, the unprecedented refugee influx from Sind would have made the pressure on land intolerable. This explains the presence of purely post-Harappan settlements with no preceding Harappan stratum in Kathiawar, *e.g.*, Kindarkhera, Amra, Lakhabawal, Devaliyo, Babarkot, Alau, Pansina and a host of others. Then again there must have been a scare that the tragedy of alien raid that overtook the Indus valley could move down sooner or later to Kathiawar. Hence, the post-Harappans were not happy with merely moving out of their original homes to others in the peninsula. They went in search of pastures new to the mainland. The only safe route led them north-eastwards into south-east Rajasthan—the situation of the post-Harappan sites of Kanasutaria and Sujnipur in Ahmedabad and Mehsana districts respectively on the way to the Palanpur gap, the only easily accessible exit from Kathiawar, is, indeed, significant. From Rajasthan they turned south to be as far away from the north-western danger zone as possible. As already pointed out, the available c.14 dates bear ample testimony to the north-south folk movement. The disposition of the chalcolithic sites and their life-span do give the impression of a people in a hurry to keep on moving. Incidentally, there must have been movement also eastwards and south-eastwards from the Gujarat coast but the mechanics of the movement have not been fully worked out due to paucity of material, though faint traces of such movement from Bhagatrav, Mehgam, Telod and Hasanpur to the Narmada and Tapti valleys and even north-western Deccan seem discernible.

Emigration to Mainland from Kathiawar-Gujarat

The archaeological record seems to confirm the emigration of folk from Kathiawar-Gujarat. A scrutiny of Rao's list of Harappan and post-Harappan sites, made upto date, shows that during Rangpur IIB about 25 sites ceased to exist. In the same way during Rangpur IIC almost 60 sites were abandoned. Apparently towards the end of Rangpur IIB the inhabitants of the 25 sites in question, approximately 12500 in number, left Kathiawar obviously for the mainland. So also the population of the 60 sites, at which there was no more occupation after Rangpur IIC,—making up a total of 30,000 souls,—would have followed the trail blazed by the predecessors of Rangpur IIB. This means

the number of emigrants from Kathiawar during Rangpur IIB and C was somewhat less than that of immigrants into it. How many emigrants left during Rangpur III is difficult to guess, though some people from the 20 Rangpur III sites apparently took new pottery types to the mainland. Though the mathematics of migration cannot really be worked out to any degree of exactitude owing to several unknown factors, like births and deaths, during a couple of centuries—we are not even sure that all possible sites have entered the survey and, therefore, the count—yet the figures provide some indication of the mass movement of post-Harappans from Kathiawar-Gujarat into the mainland.

Overall Resemblances between Post-Harappan and Chalcolithic Cultures

The post-Harappans, in all their wanderings, seem to have kept in touch with their original home in Kathiawar-Gujarat; hence the many resemblances between the chalcolithic culture of south-east Rajasthan, central India and the Deccan on the one hand and the post-Harappan culture of Kathiawar on the other. Like their post-Harappan counterparts, the chalcolithic people had to start a new way of life and took to mixed farming, comprising agriculture and animal-husbandry, around which their village economy centred. Hence the similarities in poor cultural equipment—shoddy mud-built houses in small settlements, paucity of copper tools, preponderance of stone implements, initially unimpressive pottery though subsequently evolving to complex forms, knowledge of writing confined to graffiti on pots, limited use of beads and figurines and finally, lack of organised religion. Similarities could be made to extend even to the fact of local preferences. Just as regional peculiarities in ceramics emerged gradually in Kathiawar, so did they in the chalcolithic area. All the more so in the latter, whose vast extent easily contributed to greater divergence, particularly when people were constantly on the move and going farther and farther away from their place of origin. Hence the kaleidoscopic variety of chalcolithic pottery detail.

Specific Similarities—Copper Tools

Now for some specific similarities. The flat copper axes of Ahar, Eran, Navdatoli and Jorwe hark back to Harappan and post-Harappan models from Kathiawar-Gujarat.

Microliths

The microlithic tool, including the blade industry of the chalcolithic folk was akin to that of Kathiawar-Gujarat. And yet, as if to emphasise that free availability was the main reason for choice of material, the chalcolithic people produced only copper tools at Ahar, Gilund and some other south-east Rajasthan sites, where copper was plentiful, and long chert blades—in addition to short ones of chalcedony, agate, etc.,—at Maski, Brahmagiri and Piklihal, since chert could be had from the Raichur area.

Pottery

Their pottery too, except for a few differences, was like that of Kathiawar-Gujarat. In technique at least, though perhaps not entirely in form and composition, the black-and-red ware of the chalcolithic region was akin to that of Kathiawar, where at Rangpur, Lothal and other sites it formed part and parcel of the Harappan ceramic outfit. The typical chalcolithic black-on-red, the grey,—plain and painted—and the plain red wares easily recall post-Harappan types. The cream-slipped pottery of Eran, Ahar, Navdatoli, Chandoli, etc., resembles that from Rojdi (c.14 dates of 1970 and 1740 B.C. for phase B are significant). The lustrous red ware of Ahar IC, Navdatoli IV, Prakash I, Bahal IB and Singanapalli easily remind one of Rangpur IIC and III. Ahar IC must have got the ware from Rangpur IIC at the latest and the other sites straight from Rangpur III or *via* Hasanpur in Gujarat.

Similarities in Ceramic Forms

No doubt some new pot forms and designs emerged in the chalcolithic area but many old ones persisted. It must be borne in mind that as in post-Harappan Kathiawar-Gujarat so in the chalcolithic area, no special shapes were strictly confined to particular kinds of pottery; the same forms were produced in different ceramic categories. Rao has analysed in some detail affinities between post-Harappan Rangpur, Lothal and other Kathiawar-Gujarat sites on the one hand and on the other important chalcolithic sites like Ahar, Navdatoli, Nagda, Prakash, Bahal, Tekwada, Nevasa, Daimabad, Nasik, Jorwe, Maski, Brahmagiri and Sanganakallu.

Copper & Bronze objects.

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Special note may be taken of the convex-sided bowl from Ahar IB, Nagda I and Bahal IB; the rimless straight-sided bowl of Ahar IB, the blunt-carinated bowl of Navdatoli, Nagda I, Nevasa and Daimabad; the blunt-carinated bowl with an incurved rim from Bhagwanpura and Singanapalli; the sharp-carinated bowl of Navdatoli, Prakash I and Nevasa; the convex-sided bowl with a flaring rim from Navdatoli and Bhagwanpura; the shallow bowl with a carinated shoulder from Ahar IB; the bowl with a concavo-convex profile from Navdatoli, Nasik and Jorwe; the high-necked bowl with a deep-carinated shoulder and splayed rim from Ahar IB; the carinated jar of Bahal IB, Nasik and Jorwe; the high-necked jar of Ahar IB and Navdatoli; the high-necked jar with a splayed rim from Singanapalli; the high-necked jar with a beaded rim from Prakash I; the jar with a cylindrical neck from Prakash I; the non-carinated dish of Nagda I and Prakash I; the slightly carinated dish of Prakash I; the dish with beaded rim from Navdatoli; the basin with beaded rim from Ahar IB; the basin with clubbed rim from Navdatoli; the dish-on-stand from almost every site; the dish-on-stand with a corrugated stem from Ahar IB and Nagda I; the hollow-stemmed dish-on-stand from Navdatoli; the bowl-on-stand from Navdatoli and Singanapalli; the hollow-stemmed bowl-on-stand from Ahar IB and C; the tubular-spouted vessel from Navdatoli, Prakash I, Bahal IB, Daimabad, Piklihal, Brahmagiri, Sanganakallu, Tekkalakota and Singanapalli; the carinated spouted vessel of Daimabad, Nasik and Jorwe; the spouted jar with a flaring neck from Nevasa; the channel-spouted vessel of Ahar, Navdatoli, Daimabad, Chandoli, Eran, Hemmige, T. Narsipur, Singanapalli and Paiyampalli; the *lota*-shaped vessel of Prakash; the perforated vessel of Ahar, Piklihal and Tekkalakota; the double-pot of Jorwe and Maski.

Rao's list can be easily expanded. However, to summarise the results, concordances in pottery forms between post-Harappan Kathiawar-Gujarat and the chalcolithic region comprise the convex-sided bowl, the rimless straight-sided bowl, the blunt-carinated bowl with an incurved rim, the sharp-carinated bowl, the convex-sided bowl with a flaring rim, the shallow bowl with a carinated shoulder, the bowl with a concavo-convex profile, the high-necked bowl with a deep-carinated shoulder and a splayed rim, the carinated jar, the high-necked jar, the high-necked jar with a splayed rim, the high-necked jar with a beaded rim, the jar with a cylindrical

neck, the non-carinated dish, the slightly carinated dish, the dish with a beaded rim, the basin with a beaded rim, the basin with a clubbed rim, the dish-on-stand, the dish-on-stand with a corrugated stem, the hollow-stemmed dish-on-stand, the bowl-on-stand, the hollow-stemmed bowl-on-stand, the tubular-spouted vessel, the carinated spouted vessel, the spouted jar with a flaring neck, the channel-spouted vessel, the *lota*-shaped vessel, the perforated vessel and the double-pot.

Similarities in Ceramic Designs

Similarities in design are fewer than those in form. The chalcolithic potter had certainly exercised his virtuosity in decoration and thus had contributed most to dissimilarities. With a few basic elements he effected an amazing variety of permutations and combinations. A casual glance at the pottery gives the impression that it is not only distinct from region to region in the chalcolithic area but even unconnected with the ceramic industry of post-Harappan Kathiawar. A closer look, however, establishes the identity of the basic decorative repertoire with that of Kathiawar.

Like pot-forms, decorative elements too, though mostly seen on black-on-red ware, cut across the boundaries of ceramic categories. To connect individual designs from post-Harappan Kathiawar with those from different chalcolithic sites, mention may be made of horizontal lines at Ahar IB and Nagda I; oblique lines at Nevasa, Nasik, Jorwe and Singanapalli; vertical strokes at Ahar IB and Nagda I; zig-zags at Navdatoli, Prakash I, and Daimabad; loops at Prakash I; circles at Prakash I; criss-cross at Nagda I; wavy lines at Ahar IB, Nagda I, Eran, Singanapalli, Navdatoli, Prakash I, Bahal IB and Nevasa; hatched triangles at Prakash I, Tekkalakota, Navdatoli and Bahal IB; hatched rectangles at Prakash I and Daimabad; hatched diamonds at Ahar IB, Nagda I, Prakash I, Tekkalakota and Bahal IB; foliage patterns at Prakash I, Singanapalli and Bahal IB; the peacock at Nagda I and Eran; the running antelope with wavy horns at Eran, Nagda I, Prakash I, Bahal IB and Nevasa.

In summary, correspondence in painted designs between the chalcolithic area and post-Harappan Kathiawar may be seen in vertical strokes, horizontal lines, oblique lines, wavy lines, zig-zags, loops, circles, criss-cross, hatched triangles, rectangles, and diamonds, foliage patterns, peacocks, and running antelopes with

wavy horns. Often the lines were painted in groups. The designs were sometimes arranged in successive panels, divided by horizontal or vertical bands. Schematization too, involving geometric, plant and animal motifs was resorted to. The foliage, birds and animals were stylised.

To judge by the pot-forms and design patterns, the similarities between the chalcolithic region and Kathiawar were mostly during Rangpur IIC and III. A few forms of Rangpur IIB like the straight-sided rimless bowl and the convex-sided bowl, were known in a few chalcolithic sites, but the majority of the sites exhibited similarities with Kathiawar after the evolutionary trend of Rangpur IIC had set in. There was emigration from Kathiawar to the mainland both during Rangpur IIB and IIC. However, the emigrants in IIB were only 12,500 in number, whereas those who followed as a second wave in IIC were 30,000. Hence, the degeneracy of IIB was hardly in evidence in the chalcolithic area but the evolutionary resurgence of IIC and III was very marked.

Derivation of Chalcolithic Culture from post-Harappan

Barring a few differences particularly in ceramics, there are resemblances between the two cultures in almost every item of material well-being from food-grains to figurines and from buildings to beads. They are so fundamental that they cannot be accounted for on the basis of mere borrowing by one of the two independent cultures from the other. On the contrary the similarities have to be explained only on the basis of derivation of the basic chalcolithic, that largely appeared suddenly in its area and did not start *in situ*, from the Kathiawar post-Harappan culture, which demonstrably descended from the immediately preceding Harappa civilisation.

But more than the range of resemblances, however fundamental, between the two cultures, it is the very force of events, internal and external obtaining at the turn of the 3rd. millennium B.C.,—the unprecedented flood disaster in western and north-western India, the unforeseen foreign onslaught on the Indus valley, the consequent refugee influx into Kathiawar, the unbearable pressure on limited land following the total stoppage of maritime trade, the fear of possible pursuit by aliens into Kathiawar, and the unavoidable emigration to the mainland—that compels derivation of the chalcolithic from the Kathiawar post-Harappan culture.

No other conclusion seems warranted,—certainly not the one that fights shy of the issue with the facile remark that the emigrants from Kathiawar entered the mainland and got lost among the chalcolithic people, whose origin has anyway been left quite unexplored.

CHAPTER 7

FOREIGN FOOTPRINTS

Kathiawar, we have already said, knew no foreign aggression. Did the chalcolithic area, however, feel the foreigners' presence? This question is asked because it has been suggested that the chalcolithic culture was largely west-Asian and not indigenous. If some scholars have been reluctant to go the whole hog in search of chalcolithic origins, others have turned off at a tangent.

Unscientific Methodology of Culture History

The methodology of culture history, it has been contended in certain circles, requires the assumption of borrowing until the contrary is proved. This appears a strange assumption, since it passes the burden of proof to those who deny borrowing. No scientific methodology can countenance any assumption. If borrowing is advocated, it must be proved. The mere fact that a cultural find at some Indian site is akin to another in a foreign country does not necessarily mean that the find has been borrowed from abroad. The mechanics of such borrowing must be worked out. Was the borrowing effected with the migration of folk or through trade? What was the route involved and what was the date? In the past many a case of supposed borrowing had floundered on the shoal of unforeseen difficulties, not the least being chronological. This has produced the opposite reaction. Some writers take every find as indigenous, until the contrary is proved. This view is as objectionable as the one that assumes borrowing. No find can be considered indigenous until adequat proof is available. However, the theory of borrowing has played havoc with Indian prehistory. Many finds, assemblages and even entire cultures have been assumed to be foreign with the result that a sizable portion of Indian prehistory has acquired a lop-sided aspect. Much of it may contain no indication of origin. The only reasonable attitude then ought to be one of non-committal, namely, that the origin of the relevant find, assemblage or culture is unknown.

Supposed west-Asian Traits in Chalcolithic Culture

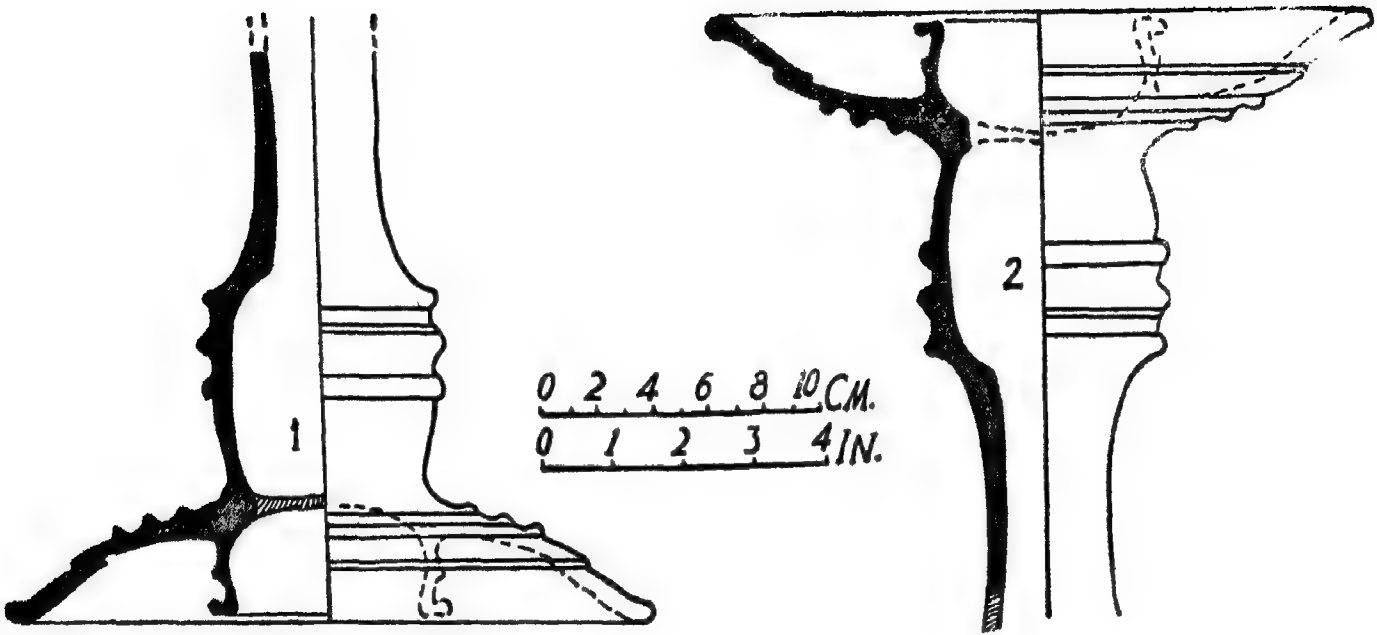
The specific items on which stress has been laid for purposes of foreign derivation are geometric, plant and animal designs on the typical chalcolithic black-on-red ware, cream-slipped or white-slipped ware—plain (from Ahar) and with paintings of dancing humans with flying hair and of spotted animals (from Navdatoli), the dish-on-stand, the bowl-on-stand (called wine-cup), the tubular-spouted and channel-spouted vessels, the conoid and concave-sided cup, the theriomorphic vessel, the bull-bottle (from Nevasa and Chandoli), the greenish grey slip of the buff ware (from Ahar), the vase looking like a chandelier or a column with a bulbous base according to its position (from Ahar), the bowl with a broad hollow stem (from Ahar), the animal-headed handles (from Ahar), the specially-wrought beads or spindle-whorls (from Ahar), the microlithic blade industry, post-cremation burials in urns and finally linseed and rice cultivation.

Indigenous Traits

The list is formidable but not all items on it seem foreign. The painting repertoire on the black-on-red ware has been said to recall Jhukar designs. These, however, were made up of mainly Harappan and some south Baluchi and Amri designs. Small wonder then that chalcolithic pottery decorations, mostly degenerate Harappan, recall Jhukar ones. The ultimate origin of Harappan, south Baluchi and Amri ceramic designs might even have been west-Asian but the point here is that these designs were already in the country when the Jhukar people came from outside. Their potters were obviously local craftsmen who mixed several kinds of existing designs to produce a special repertoire, the main constituent of which was Harappan. The Jhukar people who raided the Indus valley brought no particular pottery designs with them.

Black-on-Red Ceramic Painting Repertoire

Incidentally the occurrence of Amri and south Baluchi designs together with Harappan on chalcolithic pottery need cause no surprise. In the heyday of Harappa her influence extended all over Sind and south Baluchistan. In the latter there were Harappan outposts. There must, therefore, have been give-and-take between the cultures specially in regard to pottery designs. This apart, the refugees who fled from Sind, in the face of foreign raid, into



Ahar—1 & 2 Alternative positions of vessel on stand. Period IA

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Kathiawar could have brought with them different decorative elements. They came in two waves, one during Rangpur IIB and the other in IIC. The immigrants of IIB apparently carried with them hardly any pottery designs, for no new ones appeared on IIB pottery; but the immigrants during IIC definitely introduced the bull and a general stylisation of designs,—reminiscent of south Baluchi traits. Could it be that the first batch of refugees was only from Sind, fleeing away from Cemetery (H) invaders, whose presence was attested at Mohenjo-daro, and that the second batch included south Baluchis as well, who made good their escape *via* Sind ahead of the Jhukar raiders, whose passage through south Baluchistan had been marked at Shahi-tump by remains similar to the Jhukar ones in Sind? The evidence is tenuous but apparently consistent. While the similarity between Jhukar and chalcolithic pottery designs is easily explained, the chalcolithic potter obtained them not from Jhukar but from Kathiawar-Gujarat.

Cream-slipped or White-slipped Ware

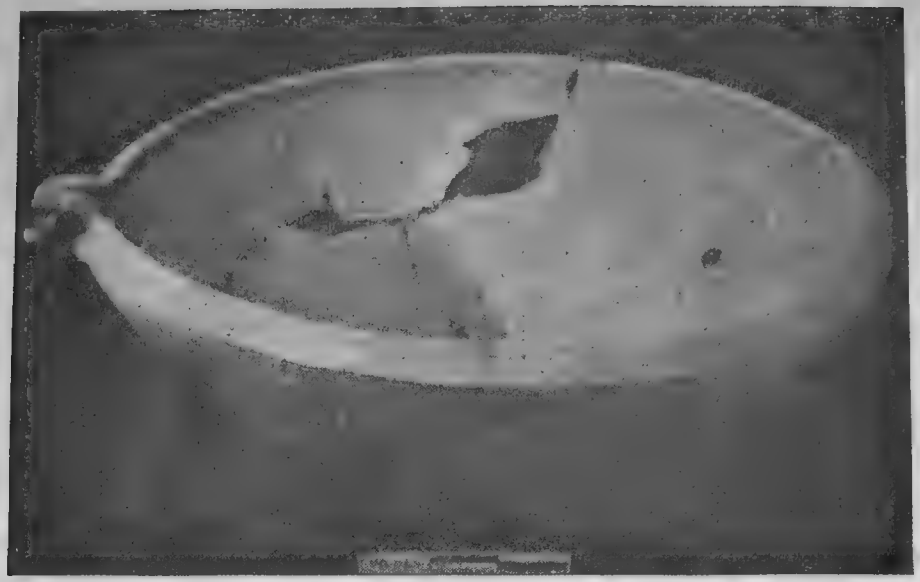
The cream-slipped or white-slipped ware is supposed to have gone from Sialk I. It is, however, a far-cry from Sialk I to Ahar IA, where we find the earliest occurrence of the plain, unpainted variety. About a couple of millennia separate the two sites. Ahar could very well have been indebted for the ware to Rojdi (in Kathiawar), where a c.14 date of 1970 B.C. is available for phase B. The ware turned up also at Desalpur from its earliest level together with Harappan pottery.

Dish-on-Stand

The dish-on-stand was so typically a Harappan ceramic form that it seems preposterous to derive it from a foreign source during chalcolithic times. The obvious inference is that the Harappan form persisted subsequently. Here we are not concerned with the problem of whether Harappa got it from outside—if it did at all.

Bowl-on-Stand

The bowl-on-stand or the so-called wine-cup was a mere evolution from the dish-on-stand. Such evolution was there even during the Harappan age and bowls-on-stand were plentiful at, *e.g.*, Rangpur from Harappan to post-Harappan times. A disser-



AHAR : Basin with short channel spout, Phase IC.

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tation on their functional use does not prove their foreign origin, for they could be used for imbibing many things other than spirituous liquid, which again, was not unknown in this land to people of a by-gone age.

Tubular-Spouted Vessels

The tubular-spouted vessels were known at least from period IIC at Rangpur from where the chalcolithic specimens of Navdatoli, Nasik, Jorwe, etc., were derived. The same source accounted for similar specimens of even the neolithic-chalcolithic sites of the southern Deccan, where significantly these vessels appeared only in the later levels, *i.e.*, with the arrival of the chalcolithic.

Channel-Spouted Vessels

Of open-spouted vessels, the shallow ones with a beak were mere oil-lamps in which the wick rested on the beak. They could even have been used for administering milk and other liquids to infants. Such vessels were known in Harappan and post-Harappan times in Kathiawar. The elongated channel was only an elaboration of the beak-like spout through a process of evolution. This trend can be noticed in the chalcolithic area. At Ahar the channel-spouted vessels had short spouts a little longer than the beaks of say, the Rangpur examples, but at Navdatoli where they appeared later, they had quite long spouts. It was once suggested that the channel-spouts ware derived from sites like Sialk VIB. But due to chronological and other difficulties involved in such derivation,—Sialk VIB was at least three centuries later than Navdatoli—it is now said the channel-spouts came from other west-Asian sites, where pottery spouts were known from 2500 B.C. and their stone originals in the 4th. or 5th. millennium B.C., *e.g.*, at Khirokitia in Cyprus. The Indian examples have no handles, whereas the foreign ones have. Though they had a long history in west-Asia, they have not turned up in the Indus valley. A few years ago a channel-spouted copper bowl turned up as part of a copper hoard at Khurdi in the Nagaur Dt. of Rajasthan. The date of the hoard is unknown. Anyway it could not have been the model on which the pottery ones of the chalcolithic area were fashioned. If the Khurdi specimen had any influence on the chalcolithic ones, the latter too would have been of copper.

Greenish Grey Slip on Buff Ware

The greenish grey slip of the buff ware of Ahar IA could have been a mere local peculiarity. It is extremely unlikely that there was any west-Asian influence in Ahar IA, which might have been Harappan. If the special kind of slip were a foreign trait, it should have manifested itself *en route*, say, in the Indus valley where it was unknown.

So-called Chandelier

The vase from Ahar supposed to have been a chandelier or a column according to its position was only an elaborate, highly sophisticated dish-on-stand. Whether the purpose of the inner circle on the dish was to hold a candle is doubtful, since candles probably were unknown then. What could have been placed in the inner receptacle is difficult to judge. Moreover, some of these vases occur in Ahar IA, where west-Asian impact was possible only through trade, which it is difficult to establish. That trade should have passed through either the Indus valley or preferably Lothal, and in both these places the so-called chandelier did not appear.

Bowl with Hollow Stem

Bowls with hollow stems were in post-Harappan Rangpur and there is, therefore, no need to derive the Ahar specimens from outside the country.

Microlithic Blade Industry

The blade industry had a long history in the Indian sub-continent. The beginnings can be seen in the period following the middle stone age and it flourished in the subsequent microlithic and neolithic ages. In the north-west the Harappan long chert blades from Sukkur-Rohri were justly famous. They were used in the whole Harappan empire extending from the Indus basin to the Gangetic valley, Rajasthan and Kathiawar-Gujarat. The post-Harappan microlithic blade industry was only a continuation of the Harappan tradition applied to fine-grained material. There is no question here of looking for the origin of the Harappan tradition, which could have come from outside. But there is absolutely no reason at all to derive the chalcolithic blade industry from a foreign source.

AHAR : A. Chandelier Phase IA.
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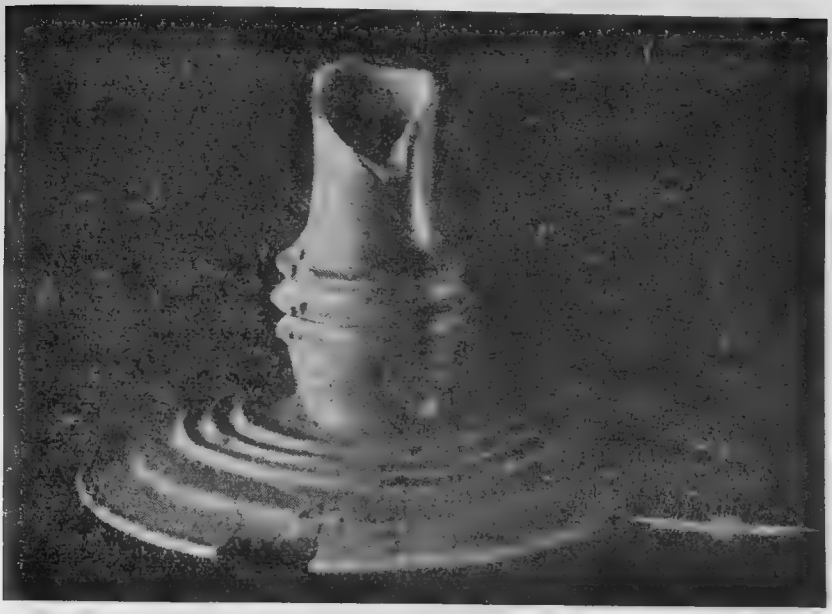

AHAR : B. Chandelier Phase IA.
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Rice

The knowledge of rice cultivation definitely did not enter the chalcolithic region from outside the country. Rice was known to the Harappans of Lothal A and Rangpur IIA. That knowledge must have lasted through post-Harappan times, though direct evidence is lacking, and crossed over to the mainland with the emigrants.

Traits of unknown Origin—Linseed

The origin of linseed is unknown. Possibly it was cultivated in central Asia. But its history elsewhere must be clear before any definite opinion can be expressed. Every other possible source must first be eliminated.

Conoid and Concave-sided Cups, Speckle-bodied Animal Design and Animal-headed Handles

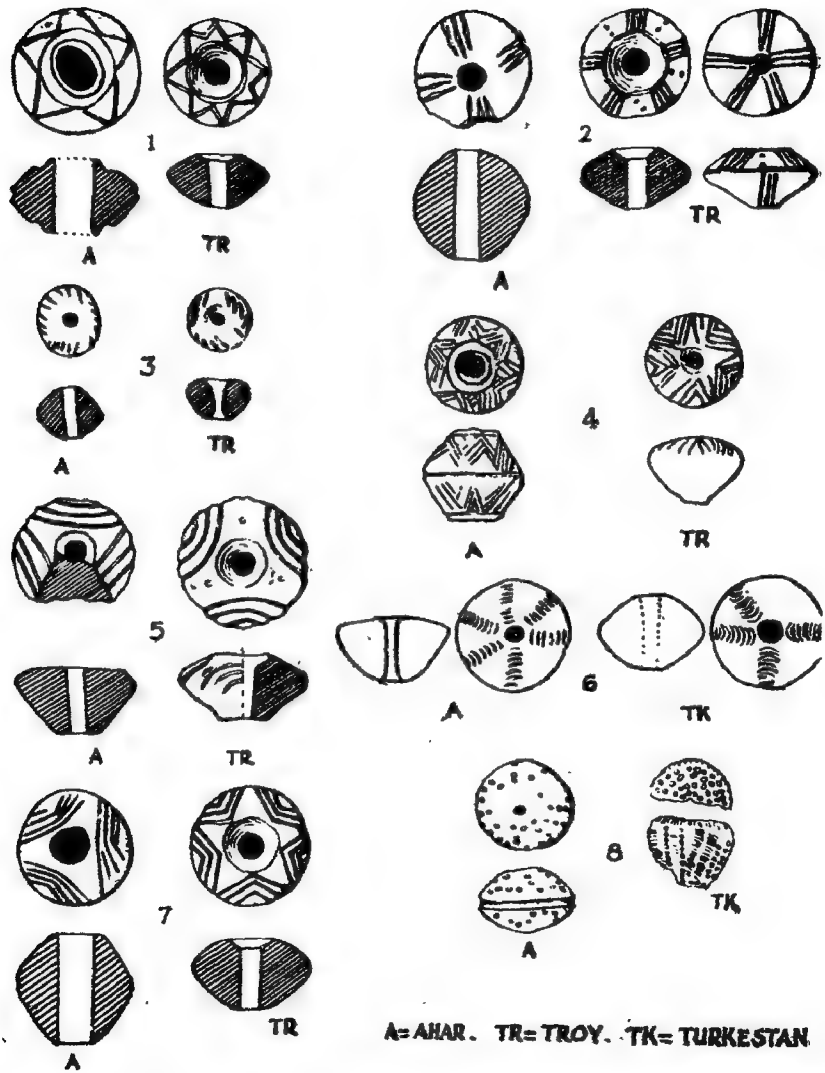
The conoid and concave-sided cups and the mode of decorating cream-slipped or white-slipped ware with animals having speckled bodies as at Navdatoli and animal-headed handles of Ahar were unknown anywhere in the country outside these chalcolithic sites. It is this factor that makes derivation difficult. Unless these items were found in the Indus valley and the borderland, the route by which they could have entered the country cannot be chalked out. So at the moment their origin must be deemed unknown.

Foreign Traits

Out of the big list of items, supposed to have been brought into the country from outside, only the cream-slipped pottery design of humans with flying hair at Nagda and Navdatoli, the beads or spindle-whorls with peculiar designs from Ahar, theriomorphic vessels from Nevasa and Chandoli and post-cremation burials could be shown as definitely foreign (please see page 66). To these may be added the mid-ribbed copper swords of Navdatoli IV and Chandoli.

Humans-with-flying-hair Design

The designs depicting humans with-flying-hair appear on post-Harappan Cemetery H ware at Harappa though not on cream-slipped ware. While the cream-slipped ware itself went to the chalcolithic area from Kathiawar, the special design painted on it was foreign.



Ahar, Troy & Turkestan: Spindle-whorls with incised designs

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Beads with Compartmented Designs

The beads from Ahar bore compartmented designs that recall those of the stamp-seals of Nal (north Baluchistan), Shahi-tump (south Baluchistan) and the Jhukar culture that followed Harappa in Sind.

Theriomorphic Vessels

Bull-bottles were in wide use in west Asia and Egypt. One specimen came from Mohenjo-daro through which the foreigners passed on their way to Chandoli and Nevasa.

Cremation

Post-cremation urn-burials known from Nevasa and a few other chalcolithic sites are supposed to have been in vogue even in Harappan times in the Indus valley and in Kathiawar-Gujarat. They were known in the Indus valley only during post-Harappan times, from where they arrived in the chalcolithic area. But there is no evidence of post-cremation urn-burials in Kathiawar-Gujarat.

Mid-ribbed Swords

The strengthening mid-rib for swords was a technique unknown in the land before foreigners brought it in. Mid-ribbed copper swords turned up from the top-layer of Mohenjo-daro,—where there was evidence of Cemetery H ware—as well as from the Jhukar culture.

There is a piece of unstratified evidence—the hoard of mid-ribbed copper swords from Kallur in Andhra Pradesh—which, though wispy, could be fitted in here. The foreign penetration into the chalcolithic area was apparently halted and beaten back by the combined strength of the neolithic and chalcolithic peoples, who seem to have wielded their ground stone axes to better purpose than the foreigners did their copper swords, though these were specially equipped with the strengthening mid-rib.

If the foreigners came to the chalcolithic region from the Indus valley they should have left behind some traces to mark the route. These traces can be seen in the so-called Gangetic copper hoards, found in U.P., Bihar, West Bengal, Orissa, Madhya Pradesh and Rajasthan. Nothing much regarding their authorship and date is known. But the mid-ribbed swords and harpoons, which were confined, rather significantly, to the upper Gangetic

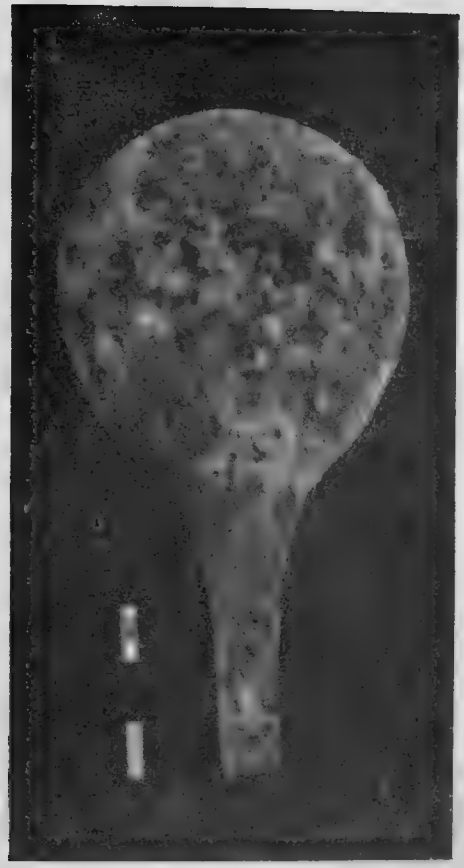
basin, must definitely have been foreign and could be dated in the 1st. half of the 2nd. millennium B.C.

The evidence shows that in the 2nd. millennium B.C. foreign influence was trickling into the chalcolithic area *via* the western borderland, the Indus valley and the Gangetic basin. The foreign footprints, however, were neither so many nor so massive as has been maintained in certain quarters.

Foreign Incursion in Waves

It has even been suggested that the foreigners from west Asia came in several waves, the first to south-east Rajasthan to found the Ahar culture, the next to central India to start the central Indian chalcolithic, as at Navdatoli, and the third to proceed further south to spark off the Deccan chalcolithic as at Nevasa, Jorwe, etc. The merit of the suggestion of multiple migration lies apparently in the easy explanation it provides for regional diversities. But evidence for massive migrations, necessary to account for the entire culture, is definitely lacking. Small groups, however, could have come at certain intervals. Only a few stray cultural traits in the whole vast chalcolithic area can be shown to be definitely foreign and to account for the migrations of the nature suggested are not needed. These traits, seen only at certain sites, emphasise selective give-and-take,—a phenomenon known in many cases of cultural contact even where a highly centralised culture and a weaker one are involved.

And so, during the first half of the 2nd. millennium B.C. there were certainly foreigners in the chalcolithic area having arrived possibly in different batches but their number was more or less limited. They got a foothold, however, and paved the way for possible followers in the future. But how far and where they succeeded in lording it over the earlier settlers will be pointed out later.



Copper or Bronze mirror

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CHAPTER 8

LINGUISTIC LINE-UP

Archaeological cultures were built by people and people talked languages. It is, hence, pertinent to link up the various cultures, dealt with so far, with particular languages. From pure archaeology to linguistics is not a happy passage and many shun it, especially when there are no written documents or when such documents have not been read to the satisfaction of all concerned. But it is precisely in these circumstances that the problem under reference arises; it does not, when the language of the written records is already known. And so whatever other evidence is available must be taken into account. The first obvious choice is linguistics. Hence *taceat archaeologia.*

To start with the megalithic culture, we have already said that towards the end of the megalithic period throve the Chera, Chola and Pandya kingdoms in the southern end of the peninsula where the Tamil-Brahmi inscriptions going back to the 3rd. cen. B.C. were discovered. So Tamil, one of the Dravidian group of languages, was spoken by a section of the megalithic people in Asokan times. The megalithic territory extended further north comprising the whole of the Deccan, where, according to available evidence, at least two more Dravidian languages were prevalent, Kannada in the west and Telugu in the east. If Dravidian languages were spoken over practically the whole of the peninsula at the end of the megalithic period, were they spoken at the start around 1100 B.C.?

Megalithic Language Dravidian

There were graffiti on megalithic pottery, but they have not been read. We have already shown that the bulk of the megalithic folk was already in the area at the beginning of the period and had not come in then as immigrants. They were merely descendants of the previous neolithic-chalcolithic population. There was, nevertheless, a section of foreigners which had brought in a few items of material culture, specially iron, which revolutionised the life of the people and effectively contributed to the transformation of a semi-urban economy at the start of the period to a

fully urbanized one at the end. But the majority of cultural traits involved in the change were neolithic-chalcolithic. The foreign element was apparently not large enough or vigorous enough—at least there is no evidence that it tried—to impose its language. There must surely have been give-and-take linguistically but the dominant language seems to have been that of the neolithic-chalcolithic people. The megalithic folk, therefore, must have spoken at the beginning of the megalithic age the language or languages—apparently Dravidian—of their neolithic-chalcolithic predecessors.

Chalcolithic Language a Harappan Descendant

To consider the chalcolithic component of the mixed culture first, the chalcolithic people too had graffiti marks on pottery but these too have not been read. As post-Harappans, who left the Kathiawar peninsula for the mainland, they must have spoken in their new home the same language as they did in the old. There, as descendants of the Harappans, they spoke a language that descended from the Harappan. There was no trace of foreign aggression in Kathiawar and hence no likelihood of any change of language.

Now we arrive at, perhaps, the most ticklish problem in Indian proto-history: What was the Harappan language? The question arises particularly because of the existence of written documents in the form of inscriptions on steatite seals, clay sealings, pottery, copper implements, prisms, etc.

Harappan Language not Tibeto-Burman

On the face of it only an ancestor of one of the groups of languages now current could lay claim to the honour of having been the Harappan language. Of these may be discounted the Tibeto-Burman group, confined to the north-east, as there is no evidence at all of its spread to the region in the north-west encompassed by the Harappan empire. That leaves three contenders in the field—the Munda, Aryan and Dravidian.

Harappan Language not Munda

To dispose of the least likely contender first, one or two scholars have suggested, though perhaps not very seriously, that the Harappan language could have been Munda. While there

Seals

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were probably Munda-speakers in Harappan society and Munda elements in the Harappan language, it is difficult to accept the idea that the Harappan language was Munda. The Munda-speakers today live in a stone age environment.

It is true, that there have been instances of some people getting less cultured in course of time. The Gurjaras and the Hunas, it has been pointed out, have now descended to the level of herdsmen from that of rulers. But they were not particularly cultured when they were rulers. They had become warrior castes, who ruled mostly by terror and did not really imbibe the culture of the folk they ruled over. Hence when fortune changed, they went back to their original mode of life, herding.

Now, coming to the Mundas, it is most improbable that they, after having been responsible for one of the grandest urban civilisations of the ancient world, could have lost their culture to such an extent as to go back to a stone age way of life. It is not suggested that no Harappan lost his culture. Some probably did after having been confined in refuge areas. But the majority were in the main stream of culture. So would have been the Mundas had they been the builders of Harappa.

Munda Adoption of Harappan Language

It is a well-known phenomenon through the ages, that people of an inferior culture do adopt the language of a superior culture, when the two live in close contact. The likelihood, hence, is that many of the Munda-speakers in the Harappan empire were absorbed into Harappan society and made the Harappan language, whatever it was, their own.

Polysynthetic Linguistic Group

To decide between the other two alternatives, namely, Dravidian and Aryan groups of languages, one must take into account the linguistic prehistory not only of the Indus valley but also of the adjoining region to the west. What cultures existed in the 3rd. millennium B.C. and what languages were spoken then? Most prehistorians and linguisticians agree that at that time a complex of urban civilisations flourished in a far-flung fertile crescent, with its horns planted in north-western India and north Africa, while the body traversed west Asia and the eastern Mediterranean. The builders of these urban civilisations had brought about the

earlier neolithic revolution too. The urban civilisations of the area like the Harappan, Sumerian, Cretan, Egyptian, etc., were all built by a people belonging to one linguistic group, the distinguishing mark of which was its polysynthetic or agglutinative character. The dead members of this prolific group were Sumerian, Hurrian, Egyptian, etc., while the living ones are Basque, Caucasian and Dravidian, which are now confined largely to refuge areas—the first and the last far beyond their original home.

Semitic Linguistic Group

To the south of the central area of civilisation—mainly in Arabia—dwelt the speakers of the Semitic group of languages. These people were the first to make an impact on the civilised world and even to found dynasties, *e.g.*, the Akkadian, in the land of the twin rivers and also to adopt the higher culture of the river valley.

Indo-European Linguistic Group

To the north of civilisation lived the Indo-European speakers in a loose confederation extending from south Russia to central Asia. Theirs was a village economy. They knew no towns—*amurru* went the Sumerian jibe. Their stray contacts with the southern cities resulted in their borrowing several items of material culture, particularly weapons, which they subsequently spread all over during their many wanderings. Their sporadic attempts to penetrate the citadel of civilisation were unsuccessful until after the days of Sargon of Akkad (2370–2344 B.C.). During the reign of his weak successor, Naramsin, the Guti and the Kássites, for instance, descended on the Sargonid empire like a scourge, overthrew it and settled down in the Mesopotamian valley. Further west went the Mitanni and the Hittites. Their migration started a huge mass movement of peoples, *e.g.*, that of the Hyksos into Egypt, of the Hebrews into Palestine and Egypt and of those of the civilised world, who, caught in the maelstrom, were pushed along the Mediterranean seaboard into western Europe and followed by the Indo-Europeans. This grand diaspora is clearly dated around the start of the 2nd. millennium B.C. and with this must be

connected the Aryan drive into India. Prehistoric archaeology fully establishes the time of the migrations. Hence, in the heyday of Harappa, *i.e.*, 3rd. millennium B.C. there was no place for Indo-European speakers or Aryans in the Indus valley.

Harappan Language not Aryan

Recently some scholars, including a few archaeologists, specially Indian, have tried to discover cultural elements, normally associated with Aryan speakers, like the practice of cremation, fire-worship, even iron in the Harappa civilisation. Anthropologists have lent their support by inventing an Aryan race. There is no definite evidence at all for cremation or any of the other cultural traits that go with Aryan speakers. And to give a so-called racial twist to a linguistic term like Aryan, specially at the present day, when new anthropological notions have consigned the old racial theories to the scrap-heap, is definitely a retrograde step. The earliest traditions of the Aryan speakers in the country are embodied in the Rig Veda. While it portrays their life in the Indus valley it does not disclose an urban civilisation but only village life. In fact, if it refers to cities at all it is only to exult in their destruction. As shown later, there is enough circumstantial evidence to point to the raid of Aryan speakers on Harappan cities to bring about their end. During Harappa's *floruit*, thence, the Aryans could not have been there and so the Harappan language could not have been Aryan.

Confirmation of the fact that the Harappan language was not Aryan is available from the attempts at deciphering the Harappan script. Ever since Marshall announced the results of the Indus valley excavations, attempts to decipher the Harappan script in Vedic Sanscrit have been made by many scholars. Wadell began the process, followed by Pran Nath, Hunter, Fateh Singh, Ray, Krishna Rao and others. For our purpose there is no need to discuss the individual attempts. It is enough to draw attention to the fact that all these scholars merely assumed that the language was Aryan. This way any language can be read into any script. In the past bilingual and even trilingual records led to the decipherment of Egyptian and Sumerian scripts. But no bilingual documents are available for Harappa. Hence a new line of approach or new method should be devised to decide the Harappan language. This lack of methodology was the main draw-back

of all the attempts in which Aryan was supposed to be the Harappan language.

Harappan Language Proto-Dravidian

The first person whom the earlier attempts struck as inadequate was Fr. Heras. In his search for a scientific method, he argued that every language has its own genius by way of peculiarities of grammar, syntax, etc., which must be found expressed in the way the language is written. An analysis of the structure of the writing, therefore, ought to reveal these peculiarities. Starting with this principle Fr. Heras analysed the Harappan inscriptions. He took full advantage of the painstaking work of Hunter, who, in fact, was the first to realise the need for structural analysis. Hunter, however, failed to push his analysis to its logical conclusion to discover the nature of the language but merely assumed that it was Aryan. Fr. Heras improved on Hunter's statistics and prepared elaborate charts, containing groups of Harappan signs that were absolutely similar, others that were almost similar and yet others which were totally dissimilar.

A study of these sign-groups showed the peculiar behaviour of certain signs. A couple of them always followed other signs. Each of these two suffixes followed different signs at different times. This meant that the suffixes obviously had different functions, possibly grammatical, like case and number. Fr. Heras thus picked out the genitive and plural suffixes. The signs that were followed by the suffixes, must have been nouns. It struck him at once that the only linguistic group in which suffixes are added on to main words is the Dravidian. With this hypothesis he started observing the behaviour of the main signs. Sometimes two main signs, obviously nouns, stood side by side. This again is a peculiarly Dravidian construction, in which the genitive sign is absent between two nouns, the preceding one indicating the possessor and the succeeding one the possessed. Quite encouraged by the progress made so far, Fr. Heras took up the same main signs and noticed that a new set of signs preceded them. These new signs could be adjectives or participles. But what arrested his attention was a whole sign-group ending in a participle, like a participial phrase, and preceding a noun. This is a very typical Dravidian structure, doing the function of an adjectival clause, which invariably follows a noun in Indo-European. Fr. Heras

then firmly concluded that the Harappan language was of the Dravidian group. None of the modern languages could have existed in Harappan times. Hence the Harappan language should have been proto-Dravidian, which was the parent.

Much of Fr. Heras' work including his methodology is still in manuscript awaiting posthumous publication. There are, however, enough hints in his 30 articles and in the introductory chapter of his book *Studies in Proto-Indo-Mediterranean Culture*, for any interested person to obtain a glimpse of his line of approach. He had fully intended to publish the complete dissertation on his methodology and decipherment, but he died before he could do it. This is largely the reason why his work did not attract the attention it deserved.

Very recently two attempts at decipherment of the Harappa script received wide publicity. One was Russian and the other Finnish. A characteristic of both the attempts is that they were co-operative in nature. Both the teams had the good fortune of a favourable background. During World War II the science of Cryptology had made astounding progress. Many a secret code, where the language was unknown, was cracked through structural analysis by the intelligence agencies of the warring nations. The first time a similar method was used to decipher an ancient script was when Michael Ventris read in 1953 the Linear B of Greece and Crete. His task was somewhat easy, since the words in Linear B were clearly separated. The Russians and the Finns employed the same method to the more difficult Harappa script, where signs followed one another in a continuous line without any distinction of linguistic units like words and phrases. The Russians and the Finns introduced a further sophistication, the computer, which handled all the analytical work. The Harappa script has thus the unique distinction of being so far the only computerised ancient script.

The Russians turned the entire Harappan written output into a continuous digital code—beginnings and ends of inscriptions were completely obliterated. They then cut it up into linguistic units—sign-groups—which they called blocks. It was not a very difficult task, since several blocks with identical sign-order were found repeated. An inscription always contained a principal block, sometimes followed and/or preceded by a supplementary block. A principal block invariably contained a main sign appa-

rently standing for a root-morpheme. A limited number of signs—called variables—always followed the main signs and were probably word-building or morphological formants. Another set of signs was classified as semi-variables by the Russians. One kind of semi-variables stood between the main sign and the variable and acted as derivative suffixes. Morphological formants and derivative suffixes apparently had grammatical functions like gender (masculine) and case (genitive and dative). A second kind of semi-variables invariably preceded the main sign and were possibly attributes.

The Russians noted that affixation of grammatical suffixes to root-morphemes is typically Dravidian. They also observed that a number of times two main signs occurred together—again a Dravidian construction—with the genitive sign missing between them. In Dravidian the expression of the genitive particle between two words, obviously nouns, is not obligatory. Analysis thus showed the Russians that the language of the Harappa script belonged to the Dravidian family—probably proto-Dravidian.

The Finns' analysis was a little different. They counted the initial, final and total frequencies of individual signs in the entire collection of Harappan inscriptions. They also got the same frequency-data for pairs of signs. Similar information was obtained for certain select groups of more than a couple of signs. The statistics revealed that a very limited number of signs with quite high final frequencies always followed others, apparently main signs. Different suffixes followed the same main sign at different times. This meant that the suffixes had different functions, possibly grammatical like gender, number and case. The Finns were able to isolate masculine and feminine genders, plural number and genitive and dative cases. In several pair-combinations the Finns noticed that both the signs were main ones with the zero-genitive. What they meant is that there was no genitive sign connecting them.

The Finns concluded that the adding of grammatical suffixes and the zero-genitive construction being typical of Dravidian languages, the Harappan language must have belonged to that group. As no modern Dravidian language could have existed in the Harappan age, the Harappan language must have been proto-Dravidian.

It may be noted here that what Fr. Heras proved in the late thirties and early forties regarding the nature of the Harappan language, by employing the analytical method, has been firmly, if a trifle spectacularly confirmed by the Russians and the Finns a generation later through the same, though highly sophisticated method. Fr. Heras' statistics, entirely manual, could not of course be as thorough and exact as those of his successors with the latest mechanical aids at their elbow. He could not, for instance, perform any control experiment with a known script, as the Russians did with Egyptian and the Finns with Sumerian, Middle Egyptian Elamite, Neo-Assyrian and Linear B for cross-checking purposes. His analysis, however, was more than adequate for the aim in view, *i.e.*, the determination of the nature of the language. In fact he discovered an additional particularly Dravidian construction, namely, the participial phrase preceding a noun.

The amazing thing is that the Russians and the Finns had no knowledge of Fr. Heras' method and the Finns who were the last in the line of decipherers were unaware of the Russian method. It cannot be a mere coincidence that every time structural analysis was applied to the Harappan inscriptions—there have been three thoroughly independent attempts,—it led to the same conclusion regarding the nature of the Harappan language.

We need not, for the purpose of this study, discuss the actual reading. It may, however, be stated that there is no unanimity. Proto-Dravidian is still in the process of formation and re-constructions have not been finalised. Moreover, phonetic values of ideographs vary due to the existence of what the Finns call homophones and the Russians homonyms. In fact, what are involved here are polyphones or polynyms,—the same sign having different phonetic values and not the same phonetic value represented by different signs. An agreed reading, however, is only a matter of time. Meanwhile, the conclusion that the Harappan language was proto-Dravidian has been firmly established.

Chalcolithic Language Proto-Dravidian

Since the language of the Harappans was proto-Dravidian, that of their post-Harappan descendants, who migrated from the Kathiawar-Gujarat portion of the erstwhile Harappan empire into south-east Rajasthan, central India and the Deccan, where

they acquired the sobriquet of chalcolithic people, must have been also proto-Dravidian.

Causes of Harappa's end in the Indus Basin

Before we take up the question of the language spoken by the neolithic people, we shall try and link it up with a language of the foreigners, who brought into the chalcolithic area exotic pottery designs, theriomorphic vessels, special bead decorations, mid-ribbed copper swords and the practice of cremation. As already pointed out, the foreigners came in through the Indus valley from west Asia. Apparently the final eclipse of the Harappan civilisation was bound up with these foreigners from the west. At present a number of scholars, particularly Indian, discount the theory of foreign aggression on Harappa after the start of the 2nd. millennium B.C. They put down the fall of Harappa to natural causes like soil-erosion due to deforestation, over-salination of soil because of bad drainage following the blocking of the Indus mouth by excessive silt, and finally unprecedented floods.

No Soil Erosion due to Deforestation

Deforestation could have been brought about by either a shift of the rain-belt or human agency. It has been argued that the wild animals depicted on the seals prove that the Indus valley was much wetter in Harappan times than it is today. The purpose of the depiction of these animals, however, is unknown. They might have had something to do with the inscriptions or might have had a religious or totemic significance. They need not have lived anywhere nearby and probably did somewhere in the vast empire or even beyond. To judge by the plant remains, there is hardly any difference in climatic conditions between Harappan days and today. Hence a shift in the rain-belt is ruled out. Deforestation by human agency to such an extent as to cause soil-erosion could hardly be envisaged in a highly centralised city-state.

No Over-salination due to bad drainage and coastal uplift

Over-salination of soil due to bad drainage, water-logging, ponding at the river-mouth, etc., has been connected with coastal uplift during Harappan times. Appearance of new land due to deposition of silt has been known along the north-western coast

of India. For example, Bombay island is supposed to have appeared that way. It is, however, difficult to be sure about the date. The coastal uplift at the Indus mouth might have happened not long after Harappa's fall. Apart from this, a highly centralised authority would have kept constant watch over possible over-salination. Regular desilting of the river-bed and mouth was surely a normal concomitant of any riverine civilisation and the more so, if it happened to be, as Harappa was, a maritime one.

Flood Havoc

There were, no doubt, heavy floods. But they could not have by themselves brought about Harappa's collapse. Floods, more or less severe, were part and parcel of the Harappan way of life, as of any river-based civilisation. They were an annual feature and there is ample evidence in the Harappa civilisation of the struggle between man and element, of measures constantly and successfully taken by man to combat nature's menace. Data from Kalibangan are not complete and so the causes of its end cannot yet be worked out. Devastating floods also hit Lothal and Rangpur but the cultures did not end suddenly. The people came back and tried to reproduce their old grandeur. That they did not was due to other causes. These brought about their emigration to a new home, where their old vitality asserted itself and set them well on the road to a second urbanization.

The Harappans of the Indus valley could not do this for obvious reasons. The effective cause of the sudden end of the Harappan cities there at the acme of their prosperity was the raid by outsiders who took advantage of the flood havoc to strike the final blow.

Foreigners' Raid on the Indus Valley

To recapitulate the data strewn over several previous pages, the circumstantial evidence for foreign aggression seems overwhelming; namely, the mass migration of barbarians from the north into the civilised world, the consequent diaspora of peoples, the spread from their place of origin in the west, of ceramics, seals, beads, amulets and weapons and their association with inferior cultures superimposed on urban civilisations, the occurrence of such cultural assemblage at several sites in Sistan, Bampur and Baluchistan all along the Indo-Iranian borderland, with signs of burning and desertion, squatters' dwellings, alien pottery, and

burials of Cemetery H culture in Harappa's latest occupation, similar pottery and dwellings, foreign weapons, over 40 huddled skeletons,—some with marks of violence,—in lanes and door-steps and also hoards of Harappan jewellery, precious metals and weapons—signs of insecurity—in Mohenjo-daro's latest layers, exotic pottery, beads, seals, weapons and squatters' dwellings of the post-Harappan Jhukar culture at Chanhu-daro, Lohumjo-daro and Jhukar, and finally the Jhangar culture with strange pottery at Jhangar and Chanhu-daro. In all this there is enough evidence of invasion, pillage, loot and arson by foreigners to account for the end of the Harappan cities in the Indus valley. The place of origin of the attack and the route it took are also clearly marked.

In this connection the fact of a stratigraphic break at Harappa between R37 and H cemeteries, belonging to Harappa and Cemetery H cultures respectively, and a like break between the two cultures in the area of the west-gate and associated terraces of the citadel is no serious objection. At Harappa in places other than the west-gate and terraces of the citadel,—and also in Mohenjo-daro's top-layer—the cultures were mixed. Obviously, the Cemetery H burials and the settlement of the Cemetery H people in the area of the west-gate and terraces of the Harappa citadel occurred after their settlement in the rest of the city.

Foreigners in the Indus Valley were Aryans

It has already been said that the foreigners who started the mass migrations and then descended on the civilised world in early 2nd. millennium B.C., were Indo-European or Aryan speakers. These must have been the ones that entered the Indus valley as well and sacked the cities. Here the Rig Vedic paean of praise to Indra for destroying the Dasyu fortified cities falls into place.

Foreigners in Chalcolithic Area were Aryans

From the Indus valley the Aryans apparently marched towards the east. Some broke away from the *drang nach osten* and turned sharply south from the western Gangetic plain *via* the Chambal valley. This drive landed them in Rajasthan and beyond. Their impact on the chalcolithic area, where they took implements, ceramic designs and bead patterns resembling some they introduced into the north-west and the Gangetic valley, could be dated around 1800 B.C. in Rajasthan, 1500 B.C. in central India and 1250 B.C.,—

the date for the Chandoli mid-ribbed copper sword,—in the Deccan. The wispy evidence of the hoard of mid-ribbed copper swords at Kallur reflects the beating back of Aryan arms from the southern Deccan to almost its northern borders which roughly mark the dividing line between the areas of the two major linguistic groups, Aryan and Dravidian.

Confirmation from the Ramayana

In this context ancient Indian tradition seems to provide corroborative evidence. The Ramayana story, in part of its historical aspect, illustrates Aryan incursion into the Deccan. This event, according to responsible scholarly opinion, took place in the latter half of the 2nd. millennium B.C. Of course, Valmiki ends his epic with an Aryan victory. The poet, of course, has a right to his license in weaving one of the world's greatest epics. The Ramayana episode seems to indicate that the Aryan inroad was carried out by a batch limited in the number of raiders and that whatever success was achieved resulted largely from the adoption of the age-old imperialist motto: divide and rule, apart, of course, from the raiders' grit and determination as well as superior technology. This apparently was the general pattern of the process of Aryanization of the country as can be easily verified from the admission into Aryan society of a considerable number of the conquered people. Another thing that the Ramayana story seems to clarify is that, compared to, say, the Aryan contact with Ahar, their Deccan exploit was later. The former apparently developed out of their initial push from the Indus valley, whereas the latter came about only after the establishment of Aryan kingdoms in the Gangetic basin. The former group was, perhaps, in addition to being a little more numerous, also more vigorous, because fresher, than the latter. The former, hence, accomplished, from the Aryan point of view, much more than the latter.

Correlation of Archæological Data with Dravidian Linguistic Splits

It is, perhaps, appropriate here to connect the archæological data with the process of major splits in the Dravidian group of languages and to assign approximate dates right from the time of Aryan entry into the subcontinent.

With Harappa's collapse in 1865 B.C. came about the first split in proto-Dravidian and north proto-Dravidian comprising the ancestors of the modern Brihui. Malto and Kurukh emerged as a separate group. Incidentally the present locations of Malto and Kurukh in eastern India need not necessarily mean that they were always there; they probably went to their present habitats in later times from north-western India.

The resultant substratum hailing from Kathiawar-Gujarat and composed of the subsequent central and south proto-Dravidian elements migrated to south-east Rajasthan and central India with the chalcolithic people about 1800 B.C. when 25 Rangpur IIB sites ceased to exist. These people should have been responsible for the Malwa ware culture of Ahar IB and equivalent strata of Gilund and other south-east Rajasthan sites of Kayatha III, which began about 1730 B.C. (c.14) and also of Navdatoli I (1657 B.C.—c.14). A further migration from Kathiawar began around 1750 B.C. when about 60 Rangpur IIC sites were vacated. These migrants should have contributed to Ahar IC and also Navdatoli II,—which in fact, were an improvement on Ahar IB and Navdatoli I, as Rangpur IIC was on Rangpur IIB. Incidentally the emigrants must have gone over to the mainland in batches and not in a continuous stream of mass migration. It was one such batch that took the lustrous red ware from Rangpur IIC to Ahar IC.

The next split in proto-Dravidian came about 1640 B.C. Leaving behind the central proto-Dravidian group, the south proto-Dravidian broke away, due to population pressure, perhaps, if not the scare of foreigners arriving in central India, and went into the Deccan towards the Krishna-Tungabhadra valley. This group contained the nucleus of the subsequent Kannada, Tamil and probably Kodagu elements. It took the chalcolithic culture both of Navdatoli I and II (or Rangpur IIB and IVC originally) into the Deccan and mingled there with the neolithic Mundas in their old settlements. The chalcolithic arrival in the southern Deccan could be dated about 1610 B.C.—c.14 date for Tekkalakota II. While the southward chalcolithic march could be traced in Prakash I and Bahal IB in the northern Deccan fringe, no pure chalcolithic sites have turned up so far in the region between Bahal and the Krishna-Tungabhadra basin.

The fear of possible Aryan push into the Deccan again affected the south proto-Dravidian group. In the resultant split the pre-

Tamil speakers started their trek further south about 1550 B.C. This was probably the time when the ancestors of Kodagu speakers went to their mountain fastness. Thus the Kannada nucleus was left behind. The pre-Tamil group included dialects that later became Toda and Kota. A section of pre-Tamils reached its destination at Paiyampalli in the Palar basin about 1485 B.C. (c.14), while the other two went to their journey's end in the Nilgiris possibly, about the same time. While the Aryan scare probably triggered the southern push of the pre-Tamils, the further linguistic splits were caused merely by the very logic of migration, when kindred groups got separated in distinct geographical areas.

The pre-Tamil arrival in Tamilnadu in 1485 B.C. incidentally would provide enough time for the Tamil language and literature to attain the high degree of perfection it did before the start of the Christian era. Otherwise we would have to assume that the pre-Tamils, again on the Paiyampalli evidence, reached Tamilnadu only as bearers of the iron-age culture around 500 B.C. That would hardly give sufficient time for linguistic and literary growth. Moreover, had the pre-Tamil migration been so late, the literature would have shown tangible traces of their erstwhile sojourn in the Deccan. Such traces, however, hardly exist. All this, at the moment, is speculation but seemingly in line with whatever evidence is available. Apart from the Paiyampalli testimony there is another which may point to a further neolithic-chalcolithic migration to Tamilnadu *vide* the red pottery and copper finds recently dug up at Gaurimedu and Mangalam in the Pondicherry area. Though this is so far the only reported discovery of copper tools in an apparently prehistoric context in Tamilnadu and is, if proved, rife with interesting possibilities, yet nothing definite can be said until the chronological horizon is clarified through c.14 dating.

Meanwhile, the Aryans had already arrived in south-east Rajasthan and central India and begun large-scale Aryanisation. The result was that central proto-Dravidian was getting divided into the forebears of modern Kolami, Naiki, Parji, Gadaba, Gondi, Pengu, Manda, Konda, Kui and Kuwi and relegated to refuge areas.

While the Aryanisation of central India was being vigorously pursued, an important Dravidian split took place around 1420 B.C. Those who may be called pre-Telugu speakers broke away from

the central proto-Dravidian area and migrated to the Deccan. Another little group too that later was called Tulu went to the south. While the former settled down in the eastern part of the southern Deccan, the latter made its way to the west coast.

The ancestors of the Telugu and Tulu speakers took the Jorwe ware and the lustrous red ware to the Deccan from central India. The ultimate origin of the Jorwe ware must be sought in Kathiawar. Though the ware as such did not appear there, its elements were already there. The gathering together of the elements into one specific ceramic form occurred only on the mainland—earliest at Kayatha III probably during the 17th. cen. B.C. At the end of that century it went to Navdatoli III (1602 B.C.— c. 14). A special feature of the Jorwe ware was that it was more regularly wheel-thrown than the earlier Malwa ware. In Kathiawar as elsewhere in the Harappan area the fast foot-wheel was in vogue in Harappan times. But in the post-Harappan period the turn-table and mould aided by the dabber and anvil became popular. The slow spun-wheel too was coming into use and gained prominence in Rangpur III. This change in potting technique in post-Harappan Kathiawar was clearly reflected in the mainland chalcolithic area in the fashioning of the Malwa and Jorwe wares. It is not without significance that the Jorwe ware duplicated generally the ceramic forms of Rangpur III. As for the lustrous red ware it went from Rangpur III to Navdatoli IV (1443 B.C.—c.14) and farther south.

After the pre-Telugus settled in the Krishna-Tungabhadra basin together with their kinsmen, the pre-Kannada speakers and the Mundas, the mixed neolithic-chalcolithic culture spread northwards. This northern movement is clearly attested by the available c.14 dates for certain Maharashtra sites with an increasingly predominant Jorwe ware culture. Sonegaon the southern-most began about 1375 B.C. (c.14), Chandoli further north in 1330 B.C. (c.14) and Nevasa the northernmost in 1253 B.C. (c.14). This northward push of the mixed culture was halted by the Aryans. After their conquest of central India in the 16th. cen. B.C. as testified to by the mid-ribbed sword of Navdatoli III, they advanced into the Deccan in the 13th. cen. B.C. as evidenced by the mid-ribbed dagger of Chandoli. They pushed along into the southern Deccan, from where, as hinted by the Kallur hoard of mid-ribbed swords, they were beaten back probably towards the end of the 13th. cen.

B.C. to the northern Deccan which, however, could not be saved from Aryanisation.

The Dravidian splits and migrations may be schematically represented as shown on page 86. Some dates are unknown, while others are absolutely tentative. They are, however, much higher than those given by scholars, who have identified the Dravidians with the megalithic folk. The chronological difference lends support to the view that the foreigners came to the south in more than one wave.

Linguistic effect of Aryan Drive into Chalcolithic Region

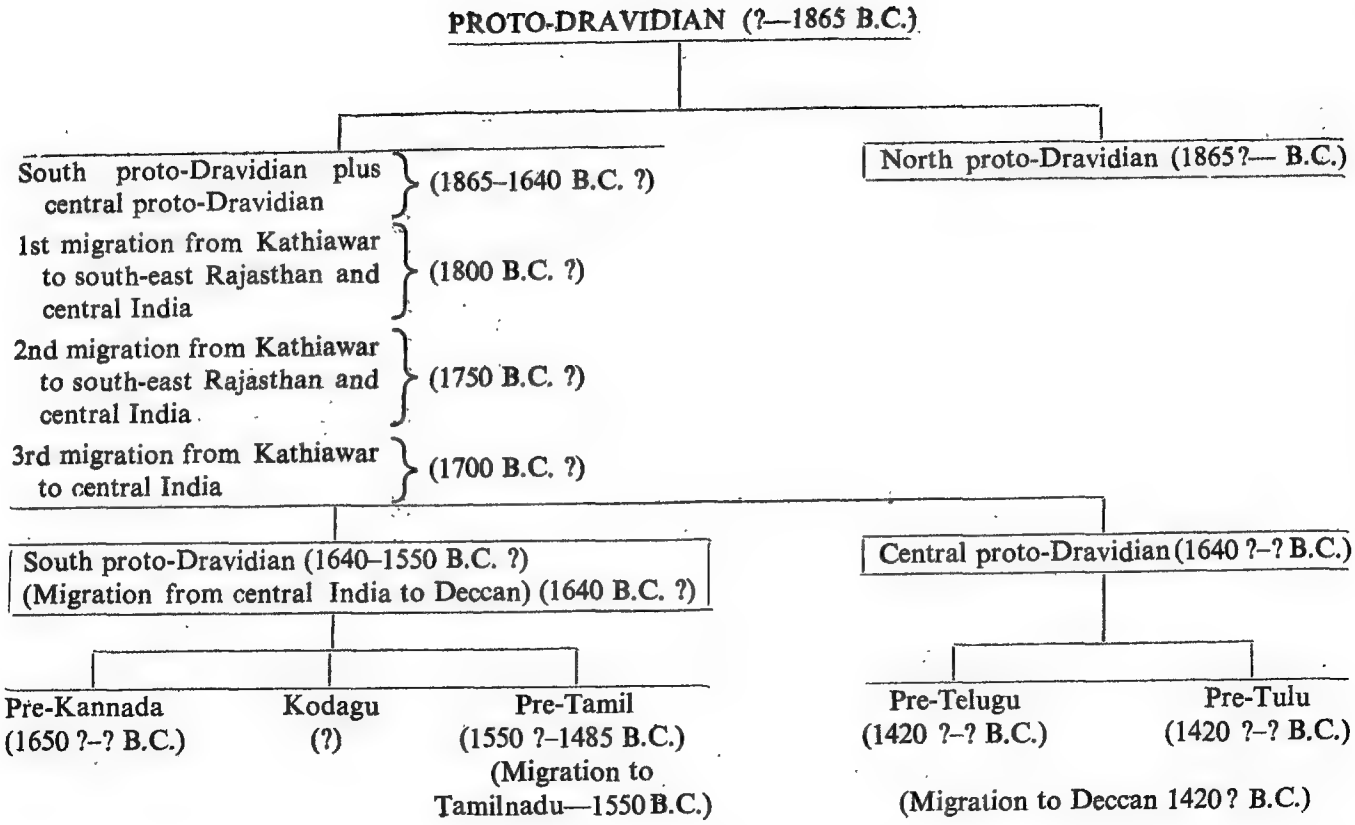
The Aryan southern drive brought about in the northern region of the chalcolithic area, namely, south-east Rajasthan, central India and the northern fringe of the Deccan, not only the splitting up of proto-Dravidian into individual languages and their relegation to refuge-areas but also their replacement by Aryan tongues. This must have been the time when the Prakrits, from which the modern Aryan languages like Rajasthani, Hindi, Oriya, Marathi, and Konkani descended, began. In the southern chalcolithic region, however, there resulted only division into Dravidian languages but no replacement by Aryan.

Neolithic Language Munda

Having linked up the chalcolithic people with proto-Dravidian and the foreigners with Aryan languages, the neolithic folk, we may decide through a process of elimination, were Munda speakers. We shall elaborate the point by applying the regressive method.

Three-fold Linguistic set-up in South India at start of Historical Period

Modern south Indian society reflects an amalgamation of three old linguistic elements, Aryan, Dravidian and Munda. How long ago did they get together? Working back, we notice that at about the start of the historical period the same linguistic set-up was reflected by even the earliest stratum of the most ancient extant literature of one of the Dravidian languages, namely, Tamil. True, no extensive critical analysis of the literature with a view to isolating the Aryan and Munda traits has been made. Yet certain broad conclusions are possible. There was certainly a sizable Aryan element, possibly larger than many scholars care


PROTO-DRAVIDIAN (?—1865 B.C.)
South proto-Dravidian plus central proto-Dravidian
(1865–1640 B.C. ?)
North proto-Dravidian (1865?— B.C.)
1st migration from Kathiawar to south-east Rajasthan and central India
(1800 B.C. ?)
2nd migration from Kathiawar to south-east Rajasthan and central India
(1750 B.C. ?)
3rd migration from Kathiawar to central India
(1700 B.C. ?)
South proto-Dravidian (1640–1550 B.C. ?)
(Migration from central India to Deccan) (1640 B.C. ?)
Central proto-Dravidian (1640 ?–? B.C.)
Pre-Kannada (1650 ?–? B.C.)
Kodagu (?)
Pre-Tamil (1550 ?–1485 B.C.)
(Migration to Tamilnadu—1550 B.C.)
Pre-Telugu (1420 ?–? B.C.)
Pre-Tulu (1420 ?–? B.C.)
(Migration to Deccan 1420? B.C.)

to admit. This element was linguistically in the form of Prakrit and Pali and religiously in that of Jainism and Buddhism, —the real influence of Brahminism and Sanscrit began much later.

Our concern here is not so much with the Aryan as with the Munda element. The relevant literature, the earliest portion of which could be dated around the beginning of the Christian era, depicts a society composed of two main sections, one quite advanced, living in river valleys and coastal plains, with an urban way of life under a centralised administration, and given to arts, crafts and maritime trade, and the other section a rather backward one, dwelling in not easily accessible hilly tracts and forests, subsisting on rudimentary food-production and even food-gathering. The contradiction involved in the use of a language in a high stage of development to describe the singing by travelling bards of the exploits of chieftains in mountain fastnesses, of cattle-raiders and primitive forest folk can be explained only by the existence of a mixed society with two halves, one progressive and the other not yet able to catch up with the former. Of these the advanced group with its literary, artistic, and commercial and administrative achievement was surely Dravidian and the backward Munda. And so, at the start of the Christian era the society in south India showed that three linguistic elements, the Aryan, Dravidian and Munda had already coalesced to bring it about.

Three-fold Cultural set-up in Megalithic Period

Prior to the historical period, the megalithic age exhibited three cultures in a state of fusion. As already pointed out, the majority of the traits that went to make up the megalithic culture came from the earlier neolithic-chalcolithic period. There was also a foreign element which, joining with the neolithic and chalcolithic about 1000 B.C., brought about the new way of life called megalithic.

Three-fold Cultural set-up at the end of Neolithic-Chalcolithic Period

This three-culture pattern was also prevalent in the earlier neolithic-chalcolithic period specially towards the end, when the foreign element appeared in the Deccan for the first time. This foreign element belonged to the same over-all group as the one that came in at the start of the megalithic period as a second

wave. The initial wave entered the Deccan just a little earlier about 1100 B.C.

Two-fold Cultural set-up at the start of Neolithic-Chalcolithic Period

Before the arrival of the foreigners there were only two cultures, namely, the neolithic and the chalcolithic, that had come together with the arrival of the latter in the Deccan around 1500 B.C. or slightly earlier. If, as already stated, the foreigners spoke Aryan languages and the chalcolithic people proto-Dravidian, the neolithic folk must have been Munda-speakers.

Connecting Archæological Cultures with Languages

In nature nothing is lost. Things may change their appearance and even their essence, but they persist in accordance with the laws of conservation of matter and energy. So also in culture hardly ever anything irretrievably disappears. Cultural traits evolve sometimes even beyond recognition, but they continue often without our knowing their past connections. This is true of language too, that makes co-operation and ultimately culture itself possible. Rarely has a language gone for good without a trace. Instances have been galore through the ages, where languages had been replaced by others. In every case of linguistic substitution even through a conqueror's *diktat* there is a stage of bilingualism, conscious or otherwise, before the new language completely takes over. By then there has been a mutual give-and-take, however reluctant, and elements of the old tongue have penetrated the structure of the new,—all the deeper and wider if the former were associated with a superior culture. By isolating these elements and working back we can arrive at the substratum of the old language. Sometimes an ancient language has been relegated through external pressure to an almost inaccessible geographical pocket or an outmoded religious ritual. By intensive and extensive search we may trace the language. In either case the task of getting at it is arduous. So too is that of reconstructing its original pattern. A saving grace, however, is that the language is likely to have been only in a rudimentary stage of development with hardly any complexities and subtle nuances that come with time. In addition to the quest for ancient languages scholars have endeavoured to connect them with particular cultures, for after all the languages did not flourish in a vacuum but were vehicles of

thought of special societies. Applying the same criteria to the linguistic groups that had long persisted in south India, we have tried to link them up with the main cultures laid bare by the archæologist's untiring spade.

CHAPTER 9

DRAVIDIAN DESCENT

Harappans were Proto-Dravidians

To recapitulate in reverse, in the 3rd. millennium B.C. a long belt of river-based urban civilisations extended from western India to the Mediterranean via west Asia and north Africa. The people responsible for these civilisations spoke mostly languages belonging to one group, agglutinative. In India the Harappans of the Indus valley, Rajasthan, the Ganga-Yamuna doab and Kathiawar-Gujarat spoke a language of the same group, namely, proto-Dravidian. To the north of the civilised world, specifically from the Russian steppes to central Asia, lived village-oriented Indo-Europeans who spoke inflexioned languages.

Indo-European attack on Mesopotamia

At the turn of the 3rd. millennium B.C., with the weakening of the Sargonid empire—the last in the Sumerian tradition in the Mesopotamian valley—under Naramsin, the Indo-Europeans, who had been, for a long while, casting covetous eyes on civilisation's citadels, began their attack and in the bargain started a mass movement of peoples.

Aryan Raid on Indus Valley

It was about this time that the glory that was Harappa came to a tragic end. The occasion was widespread flood havoc in all the river-systems of Punjab, Rajasthan and Kathiawar-Gujarat. The real effective cause, however, was the Indo-European or Aryan onslaught on the Indus valley.

Given to ways of peace, the Indus valley Harappans had been sheltering snugly behind almost impregnable—at least so they thought,—mountain barriers. When the raiders appeared with superior weapons at their gates, their smugness received a rude shock and they succumbed to the attack. This foreign incursion was the easternmost prong of a far-flung flanking movement that closed in on the Euphrates-Tigris basin and beyond.

Kathiawar-Harappan Collapse

With the general disruption of life that ensued vanished the flourishing Harappan overseas trade specially of the Kathiawar-Gujarat region with the Indus valley and the land of the twin rivers. After the floods had subsided, the Kathiawar Harappans went back to their cities and tried to recreate the old civilisation. Their prosperity gone, they could not. They had to take to a new way of life. The only one open to them was farming with stock-breeding. They came down to a village economy from an urban one.

Post-Harappan Emigration to Mainland

The available land, however, could not stand the extra pressure from traders, craftsmen and others, particularly refugees from Sind. These had to emigrate and emigrate they did. Lured by the unknown, they struck north-east. To avoid the danger of running into aggressors, they then swerved south. In their new home,—south-east Rajasthan, central India and the Deccan—they studded the landscape with their village-culture, called by scholars chalcolithic. It more or less reproduced the post-Harappan way of life of Kathiawar-Gujarat.

Intimate Contact with Mundas

In the Deccan, specifically in the Krishna-Tungabhadra valley, they came, about the middle of the 2nd. millennium B.C., into intimate contact with and absorbed into their society many Munda-speaking neolithic people, who too were village-oriented. This contact resulted in an advancement of culture. Village economy gave way to a semi-urban one. The mixed people then spread their culture north into the Godaveri and south into the Kaveri and Palar basins.

Aryan Raid on the Peninsula

In their push northwards they were stopped by the Aryans, who by then had gone east and later south from the Indus valley and had caught up with them. The Aryan vigour, however, was not the same as it was on entry into the land. The assault was rolled back by the combined strength of the proto-Dravidian and Munda-speakers to the northern borders of the Deccan towards the end of the 2nd. millennium B.C. Nothing, however, could be done to chase the aggressors out of central India and south-east Rajasthan and these regions had to adopt Aryan languages.

Iron Age in Deccan Aryan inspired

What the Aryans failed to get by force of arms, they achieved, to a large extent, by peaceful penetration. Following almost on the heels of the first batch of raiders came a second at the beginning of the 1st. millennium B.C. This batch was the bearer of a boon to the Deccan. Whereas the former wave carried copper weapons, the latter came with iron tools and the horse too. Thus a new technology, based on a most useful metal, and a new mode of transport, based on one of the fastest of animals, entered the Deccan and brought about a revolution which copper could never have achieved. Its source of origin of copper was far away, whereas iron was right there. A new society took full advantage of the new cultural elements. The semi-urban economy received a big push. The villages were getting more and more populous. New areas were colonised. Trade expanded. Prosperity led to an elaborate ritual for burying the dead in huge megalithic monuments. The new culture, which merely developed out of the earlier composite neolithic-chalcolithic, was well set on the road to full urbanization. In fact, the end of the period saw the emergence of towers. The hands of the clock had turned a full circle in a couple of millennia. Having fallen from an urban environment to a village one the Harappan descendants were back again in cities after having passed through a stage of semi-urbanization.

Three-fold Linguistic Set-up

In the new society that was emerging three strains went to make up the grand mosaic, *viz.*, Aryan, Munda and Dravidian, the last continuing to remain the dominant one. A process of synthesis had begun. The old Harappan vitality started asserting itself through contact with on the one hand, Munda-speakers, flushed with the pride of achievement in having crossed the neolithic hurdle, and on the other comparatively vigorous Aryans, quite conscious of their superior technology and speedy transport.

Harappa Reborn in South India at Dawn of History

In a spurt of cultural atavism coastal regions were opened up. Port-towns were founded. Maritime commerce started. Arts and crafts were cultivated. Centralised administration held sway over vast tracts. Linguistic development took big strides.

Writing came into its own. Literature reflected the grand panorama. And so, the dawn of history witnessed in south India an almost exact replica of the grandeur that was once Harappa. If, as Toynbee remarked, the Mauryan empire was apparented to the Harappan, the contemporary Tamil kingdoms were no less so.

We are now in a position to answer the question originally posed: From where and when did the Dravidians come to south India,—to be precise, the compact area where they live today? In the course of the foregoing survey, which attempts to answer the question, the problems of the mixed nature of present day Dravidian society cropped up. Hence the query: What are the cultural elements that have gone to make up the mixed Dravidian social set-up?

Need of Wide Perspective

It is, perhaps, not out of place to stress here that quite a few of us have, in our persistent pre-occupation with the trees, lost sight of the wood. We have, in our meticulous assessment of archæological minutiae, failed to keep an eye firmly fixed on the over-all picture. There are many tomes bristling with the most elaborate details of the cultures of a large number of sites. There are even notices of cultural affinities between kindred sites. But there is hardly an effort that reveals the results of a general panoramic view both in space and time. We, doubtless, need the most exhaustive treatment of work pertaining to individual sites. The stage, however, has arrived, it seems, when we should sit back and take a long look on a huge canvas. Our perspective should no longer be limited by sites and even regions but extend over the entire subcontinent and beyond, and again not be narrowed to a few centuries but must bridge many millennia. The gaze, thus widened, will automatically take into account the origins of the concerned cultures and, where such origins have not yet been ascertained, try and work them out. Our concern here is not so much with northern India, where the sources of the painted grey-ware culture, the ochre-coloured pottery culture, etc., have yet to be satisfactorily settled. They do not have any large bearing on our problem, which concerns mostly south or peninsular India. True, the origin of the southern neolithic culture is as yet unknown. The available material is not enough to unravel the mystery. But indications seem sufficient to show that whatever the findings,

they will scarcely be likely to upset the conclusions reached regarding the megalithic, chalcolithic, post-Harappan and Harappan cultures.

And so, we may wind up with the modest claim that archæology, assisted by linguistic prehistory and ancient Indian tradition, does give us enough evidence to derive the Dravidians from Kathiawar-Gujarat as the direct heirs of the chalcolithic descendants of the Harappans and to deduce the date of the latter's arrival in their present peninsular habitat as approximately 1600 B.C. We get further data pointing to their amalgamation with the Mundas, whom they met on arrival, and the entry of the Aryans around 1000 B.C. into the resultant three-dimensional society.

THE END

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